

THE FRESHMAN AND HIS COLLEGE

A COLLEGE MANUAL

BY

FRANCIS CUMMINS LOCKWOOD

PROFESSOR OF ENGLISH LANGUAGE AND LITERATURE
ALLEGHENY COLLEGE

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THIS BOOK IS INSCRIBED TO
MY STUDENTS
WHEREVER DISPERSED
IN THANKFUL APPRECIATION OF THE
MANY HAPPY HOURS SPENT WITH
THEM IN THE CLASS-ROOM

PREFACE

THIS book was prepared by one who, not many years ago, was a good-for-nothing Freshman. I much lament now, the time and opportunity which I ignorantly and idly wasted that first year in college. I do not think, though, that I was altogether to blame, for at that time I had a very vague conception of the real meaning of a college course. I think that I now know how it was that I made so many mistakes the first year. It is in the light of these useful experiences of my own that I am now prompted to make a modest attempt to aid a new generation of Freshmen during their first months in college. For a long time, in common with many other college instructors, I have been much grieved over the needless waste of Freshman life. In many of our larger institutions a considerable percentage of the Freshman class has been sent home during the year; and in every Freshman class there are a good many students who stumble and blunder painfully through the year, and if saved are saved only as by fire. I cannot but think that, as instructors and older college men, we owe it to Freshmen, in some measure at least, to show them the way to the things that are worth while, and to set the signal lights for them along a somewhat perilous route. And surely it must somehow be possible for a boy to learn without enrolling in the school of hard knocks. It seems to me that there is almost no type of wisdom so high as that which, by anticipation, can learn from the faults and follies, from the virtues and successes of others how to choose the right course of action and how to avoid the wrong one. At any rate, it is with the

friendliest desire for the welfare of the Freshman and with the most confident belief that in the breast of the typical college youth good qualities ever predominate, that I offer my help through this book.

My own contribution to the book is small, for I have preferred to select my material mostly from the writings and the utterances of men of secure distinction. I am under obligation to these men for their generous consent to reprint what they have said or written. I therefore here record my grateful acknowledgment to President David Starr Jordan, to President William DeWitt Hyde, to President Charles William Eliot, to President Alexander Meiklejohn, and to President John Grier Hibben for the use of articles reprinted under their names. I desire, also, to express my special obligation to the various publishers who have so kindly permitted me to use material which bears their copyright, and to Mrs. Phoebe E. Johnson and Mrs. Harriet W. Thoburn for permission to reprint the addresses of their deceased husbands. I wish that I might also make due acknowledgment to the many writers whose articles or books I have read but whose names I have not been able to mention. In recognition of their aid, and as a partial guide to the student who may desire to read more on college subjects, I have included a list of a score or more of the most useful books and articles that have come under my eye. And finally, I must not fail to express my thanks to my esteemed colleagues, Professors W. A. Elliott and S. S. Swartley, and to Professor Lincoln R. Gibbs, for their valuable suggestions and their painstaking reading of my manuscript.

F. C. L.

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THE FRESHMAN AND HIS COLLEGE

INTRODUCTION

For eager teachers seized my youth,
Pruned my faith and trimmed my fire,
Showed me the high, white star of truth,
There bade me gaze and there aspire.

MATTHEW ARNOLD

I

COLLEGE LIFE MERELY AN OPPORTUNITY

At the cross-roads of life Hercules met the seductive form of Folly; but he chose to walk with Virtue, who at the same time invited him into her paths. The Freshman, also, stands at the parting of the ways. He will not have been in college a week before he will have to make choices that shall largely determine all his goings and comings for the future. "Success consists in being ready for your opportunity." To be permitted to go to college is a privilege that few may claim — a privilege too high to measure. Yet the guarantees of college life are far less certain than most Freshmen suppose. Entrance upon college life is, after all, only *an opportunity*. The course will be strewn with wrecks all the way along the Freshman year. Many will be sent home because of idleness or dissipation. Some will be endured, but will be so hobbled and handicapped by conditions and penalties that they might almost as well be out of the race. And even of those who persevere to the

end of the four years course, not a few will at last prove failures in it. The mere fact that a man has completed a college course is no assurance of success in life. "For many years it has been possible in New York City to employ at from ten dollars to twelve dollars per week large numbers of lawyers of over ten years standing who were graduates of both college and law school."

So this new world in which the youth finds himself is not the magic world that he had supposed it to be. The tropic isles and Elysian fields are still far to seek. The college world is, in reality, the nearest approach to an enchanted realm that we shall ever find on earth; but there is sore danger that a youth may wander with Caliban and drunken Stephano into the thorny places and standing pools instead of into the cave of Prospero, the master magician. In a sense, the student within college walls does "fleet the time carelessly as they did in the Golden World." Yet there must be some hewing of wood and drawing of water; there are flocks to tend; there is grubbing to do. One must, like stout Robinson Crusoe, bring off one's goods on rafts, and build oneself a house, and set it about with stakes, and explore, and develop, and defend the heritage the shores of which one has succeeded in reaching. Success during the first year at college depends upon common sense, upon work, upon decency and sobriety. If a boy has drifted in from "the gold coast" to indulge in the luxury of a college course by special dispensation, his ship will find sure anchorage in no respectable college. The lazy, idle, vicious boy, who thinks of college life as being merely an opportunity to loaf and dissipate, to engage in athletics, and to recline in the elegant leisure of a sumptuous fraternity home, is doomed to failure, disappointment, and humiliation.

II

THE AMERICAN COLLEGE UNDER FIRE

As a matter of fact, every college president and every college professor knows that the average Freshman is not such a youth as has just been described. We know that the great majority of Freshmen are bright, candid, earnest, and lovable boys who are coming up to college with a high and pure ambition to make the most of themselves and to make life count. But the American college is under fire. Many influential people think that our colleges are not justifying themselves; that Freshmen are, for the most part, noisy, lazy, conceited, dissipated young upstarts; that the average college graduate who goes into business is unable to hold his own with the boy who has gone directly from the high school into the office or the factory. These critics question whether what stands for a college education does not do a young fellow more harm than good. Men of standing and ability and wide knowledge of the world variously allude to the college as "a club for idling classes," "a training school for shamming and shirking," "the most gigantic illusion of the age," a sort of "educational vermi-form appendix." These men are disposed to think that a college diploma rarely assures intellectual discipline. One great journal affirms that "students nowadays get from their college life little but educational disadvantages." And, worst of all, scores of our chief educators and educational experts are sounding solemn notes of warning to college authorities as well as to undergraduates. We are told that our graduates are not as "ripe and fit" for advanced professional study at twenty-three as the German students

are at twenty. It is charged that "the college graduate is neither a trained nor a serious worker." President Garfield of Williams thinks that college doors should be closed promptly and effectually against "those who loaf because they choose to, and who do not propose to change their occupation." One brilliant educator does not believe that the public should be put to the expense of a thousand dollars per head in order that boys may go through college merely "to enjoy themselves in drinking and in betting on athletics." President Pritchett of the Carnegie Foundation for the Advancement of Teaching says, "the two objections generally brought against the college today are vagueness of aim and lack of intellectual stamina;" and Mr. Flexner declares that "a youth may win his degree on a showing that would in an office cost him his desk."

These are serious charges that are brought against us, and it is well that the student should know about them from the start. In almost every case they are made by men whose opinion is worthy of consideration. Indeed, for the past ten years, the drift of public opinion in certain quarters has been setting powerfully against the college. Of course there is much to be said in reply to all this; and much has been said sanely and forcefully. College authorities are doing all that they can to make conditions better. But just now it is especially important that the entering student — that all undergraduates, indeed — should have clear ideas of the meaning of college life and should be heedful of the honor and prestige of the college.

Why did you come to college? Have you a clear idea of what you are seeking here? Will the motive that prompted you to come bear scrutiny? Do you know what a college course really stands for? Did you just drift in? Or are

you here only because you were sent? Did you come merely to have a good time; to loaf; to enjoy the social life of the college; to join a fraternity; and to win and wear new and larger honors in athletics? The student who is actuated by no higher motives than these is not likely to be happy here. His studies will prove more or less of an annoyance to him, and the professors are sure to be a nuisance. Such a fellow will clutter things up, and get in the way of the business of the college. And even if he were allowed to "ply his music" — allowed to shirk and dodge and temporize — he could not afford it; he would be "paying too dear for his whistle."

III

WHAT A COLLEGE EDUCATION REALLY MEANS

As I was reading a book by Dean Briggs of Harvard, the other day, I came across an expression that I like very much — "the difficult and windy heights." That suggests to my mind the real college atmosphere. And it calls up images that make my blood tingle. It braces me for action. Is not the supreme object of a college education the strenuous pursuit of knowledge and the severe disciplining of the moral nature? The great Thomas Jefferson gives this as the object of higher education: "to develop the reasoning faculties of our youth, enlarge their minds, cultivate their morals, and instill into them the precepts of virtue and order; . . . and generally to form them to habits of reflection and correct action, rendering them examples of virtue to others, and of happiness within themselves." The college is not a place for idleness and triviality, for sport and luxury, for the thousand and one absorbing side-interests that

today make up the major part of college life. The college, says President Woodrow Wilson, "is for the training of the men who are to rise above the ranks." It is an arena for intellectual wrestling—a place where the soul is to practice its athletics. It is here that young men are to come to grips with themselves, and with the blood-red social and political problems of their own day. Here truth is to be sought and won—at whatever cost of personal comfort, or of previously cherished creed or dogma. Every old fellow who is now out in the world in the thick of the battle knows very well that it is not enough that he should carry away with him from campus and halls the memory, merely, of a "good time" at college. Such a memory is no doubt a luxury. But he knows that he should have gone forth from the college laden also with a store of such solid mental and spiritual wealth as should give dignity, charm, and authority to his later life.

Not that scholarship and moral training exhaust the full intention of the college! The college ideal involves much more than this. "Pleasure perfects labor, even as beauty crowns youth." The college world lies perpetually bathed in a purple mist of sentiment, romance, and youthful enjoyment. "From towers and gardens are whispered 'the last enchantment of the Middle Age.'" "It is a great thing," says one who styles himself "a mere don," "to be able to loaf well; it softens the manners and does not allow them to be fierce; and there is no place for it like the streams and gardens of an ancient university." And, though our American colleges have not about them so much of venerableness as have those of England, and though our campuses lack much of the opulent beauty and exquisite quiet of their gardens, there is always in the spirit of youth a gift of ideali-

zation and romance sufficient to gild and enrich the environment in which its lot is cast. So there will always be in any true college life this over-glow of sentiment, aspiration, comradeship, and pure physical enjoyment. Long before the day of "the tumult and the shouting" that has come to be such a distinctive part of modern college life, the sage Emerson wrote that sometimes, "What we do not call education is more gracious than what we do call so." He no doubt had reference to certain thrilling excursions that he now and then made on his own account into the unfrequented paths of literature. He loved to browse in the dim, cool, and secluded fields of poetry and philosophy that were outside the required curriculum. But, however it may have been with Emerson, we all know that, over and above the regular course of study, educative influences of the highest importance play upon us and shape our thought and our character. Through friendships, through books, through solitude and society alike, through autumn walks, and long talks by the winter fireside, and through the soft pipings of Arcadian poets from forgotten fields of romance, as well as through the sharp, urgent call of the trumpet that summons to public tasks in the living present, shall be woven for every alert man the fabric that we call a liberal education. A thousand experiences and passions will intertwine to build up in him the full-rounded human soul.

Even athletics finds a normal place in a complete scheme of liberal education. It is true that in the past there have been many gross evils wrapped up with college athletics. Too often our colleges have developed a one-sided athletic interest — stressing particular forms of sport to the exclusion of other games quite as worthy. Some of the more popular sports have demanded too much time and money

and attention on the part of both faculty and students. There is, too, the constant temptation to bet on games and to spend much time in idle and boastful talk about athletes and athletic events. Worse still, a strong taint of professionalism has sometimes hung about our colleges; and not infrequently there has been undue roughness, and even gross fraud and brutality. Weak college presidents and unworthy faculties have lowered the standard of scholarship in the interest of the athlete, and sometimes have made unwarrantable concessions to brilliant players in order to induce them to enter particular colleges. Most of these evils have been corrected or are being corrected. All honorable educators will agree with President Jordan of Leland Stanford, that "the athletic tramp should receive no academic welcome," and that "the athletic parasite is no better than any other parasite."

But setting aside the evils of athletics that have done so much of late to discredit colleges in the eyes of plain, honest, sensible people, no one can deny that physical sports have an important place in a modern college. There can be no perfectly sane and healthful life apart from a strong, sound, well-developed body. Nor will any one deny that youth is the best time to train the body as well as the mind. There is, too, a necessity for youth to exert its over-plus of energy in joyous physical exercise. The play impulse is natural to grown-up life as well as to child life; and it is wholesome. It is a pity that some of our sour and dyspeptic ancestors did not find this out sooner. All wise men believe it now, and we are learning better how to play — how to secure recreation for mind and body.

But it is college athletics that chiefly concerns us. All will agree with President Jordan, that "the color of life is

red;" and every manly student will want to give a fair amount of time to outdoor sport, and will desire to make a place for himself in the athletic life of the college. And what are the chief benefits and values of college athletics? They are many: the spontaneous delight that any healthy boy ought to feel in competitive sports that try his skill and courage; the joy of comradeship in struggle and achievement; the high and worthy sense of losing one's self in the spirit of the whole body; the legitimate pride and satisfaction that come from well-earned victory. And the real edge of this delight in victory comes from the realization that one has striven not so much for one's own glory as for the glory of the college. A certain Princeton man, "when his leg was broken in the foot-ball field, rejoiced that it was not one of the first team that was hurt." That was heroism in the making. It is of the essence of education to be able to work with others to a common end. College athletics exalts the spirit of fair play. It inculcates true sportsmanship. It requires one to "play-up," and to play the game to the end. It teaches one to take defeat in a manly way. The true college athlete despises the "knocker," the "quitter," and the "mucker." He is a good loser as well as a good winner, for he cares more for the game than he does for the victory. "A man may play a strenuous game, the fiercest ever seen on the gridiron," says one of our great college presidents, "and yet keep the speech and manners of a gentleman." Alertness, self-restraint, resolution, judgment, unselfishness, self-control under great provocation, and prompt decision in sudden emergency — these are some of the qualities that are developed by intelligent and honorable participation in college athletics. And these are physical, mental, and moral virtues well worth cultivation entirely

apart from the transient delight and recreation that they afford.

We could wish that more of the care and outlay that go to the training of stout Ajax, in order that he may be still stronger, and to swift Achilles, in order that he may become still fleet, might be directed to the building up of the soft, fragile, and hollow-chested comrades of these mighty athletic heroes. The law of the Scriptures, that "to him that hath shall be given, and from him that hath not shall be taken away even that he hath," seems to find its too literal fulfilment on our college fields. In American colleges we unduly emphasize certain forms of athletics; we cultivate the spectacular; and we make more of a business of athletics than a sport. Every student should receive physical oversight in the gymnasium; and every student should take some recreation in the open air. There are innumerable ways in which one may find congenial and relaxing exercise out-of-doors. In addition to the two or three forms of recreation that are sure to be duly stressed, there are tennis, lacrosse, rowing, swimming, skating, cross-country running; and, commonest of all, yet among all the most uncommonly good, the exercise of walking; better if it take the form of a tramp; and best of all if the tramp be taken in company with a chum or two, for then the exhilaration of vigorous physical exercise under the open sky amid a thousand entrancing sights and sounds of nature will combine with the joy of comradeship and the intellectual stimulus of congenial talk.

But, after all, the first and highest task is the making of mental and moral muscle. It is the function of the college to tighten up a man's intellectual gearing. Men are in college to learn the value of discipline; to acquire the art of study;

to establish habits of promptness, accuracy, and thoroughness. Nothing whatever can take the place of these things, or make up for their absence. The essential thing in a college course will have been missed if the student fail to knit into the mental and moral fibre of his life something of the method, the endurance, and the resourcefulness that the army, the navy, the railroad systems, and the great business corporations demand of their men. In the world men have to bear their tests in the open. In the emergencies of life no allowances are made; we must make a passing grade unaided and on the spot. Dean West of Princeton exhorts college faculties that they "will need to be resolute in teaching young men that there is no real education without well-directed effort; that it is not doing what a man likes or dislikes to do, but the constant exercise in doing what he ought to do, in matters of intellect as well as of conduct, whether he happens to like it or not, that turns the frank, careless, immature, lovable school-boy into the strong, well-trained man, capable of directing wisely himself and others."

IV

FRESHMAN DIFFICULTIES AND DANGERS

It is a hard strain that the Freshman must bear during the first few weeks of the college year; yet this is the crucial time in his career. There are those who are unfit for college life, either because of stupidity, or indifference, or bad character. Such ought never to have come to college. The weeding out of such students is a process painful to all concerned. Through no fault of his own, a student may have come with poor preparation. He may be handi-

capped because he has to make his own way; or, possibly, he comes too confident of his ability or too dependent upon the social prestige that is back of him. He has broken home ties; he is in new and strange surroundings; he is for the first time in his life free to come and go as he pleases — master of his own purse, released from the supervision of either parent or teacher. All this gives him a sense of pride and elation; but he runs serious dangers. For this is just the period of life when one is almost as much a stranger to one's self as to one's surroundings. The transition from boyhood to manhood involves tremendous changes, both mental and physical. One is no longer quite a boy, yet he is not altogether a man. There is, therefore, more or less confusion within, more or less lack of coördination, and, possibly, a not altogether happy blending of diffidence and self-assertiveness. The youth is not entirely sure of himself; yet, for the world, he would not have anybody suspect it. It is a time, too, when the senses make the most urgent demands for present gratification, and when curiosity most strongly impels him to see and to know the world — to touch, to taste, and to handle. And, as likely as not, he has imbibed the foolish and terrible doctrine that in order to know the world he must wallow in it. So a boy's curiosity, his appetite, and his immature conception of what it means to be a man seduce him into follies that neither time nor eternity can undo.

Is it any wonder that friendly instructors are anxious about their Freshmen? They well know the difficulties and dangers that a Freshman must face as soon as he enters college. We have known scores of youth who, just at this juncture, have chosen to tread the "primrose path of dalliance." Some professors are hard-hearted enough to stand

coldly aside and "let Freshie try out." "College," they say, "is a place for mistakes. Some will sink and some will swim. It is a case of the survival of the fittest, and let the devil take the hindmost." It is not to be denied that, in the last resort, every fellow must look out for himself and take what comes. Every student is given his liberty; and it is right that it should be so. The wisest educators believe that liberty is essential to sound and full development. But do not think "that to be a man is to test the things that any gentleman avoids." You have liberty to fall as well as to rise. You are free to choose the bad as well as the good. It stands within your choice to bind golden laurels of scholarship upon your brow, or to go straight to the devil. Bismarck is credited with saying that in the German universities "one-third of the students work themselves to death, one-third drink themselves to death, and the other third govern Europe."

V

DEVOTION TO BOYHOOD IDEALS

Men of the world are always sorry when they see a young fellow under the stress of temptation, afraid to stand up for his ideals. The ideals that we held in our boyhood are the best that we shall ever have in this world. They are worth fighting for, and the truest and bravest men in this world are the men who have carried the visions of their boyhood and their youth unsullied through the fierce battle-field of young manhood and middle life; or have stood ready gladly to die for them on some storm-swept summit at noon or evening-tide. Of course, a Freshman's horizon will expand, and he will come to see things in different perspective, and

no doubt many of his ideas are crude, and his ways provincial. There is bound to come enlargement and enlightenment and readjustment. That is exactly what the college life is for. He will, of course, not be a clam or a prig. He will, as a matter of course, usually go with the crowd, for the college crowd is usually going in the right direction. It is thus that he will lose his egotism, selfishness, and self-consciousness, and it is thus that he will get the rough edges knocked off his personality, and the wrinkles ironed out of his provincial training. So he should by all means go in heartily with his fellows whenever he can do so without sacrifice of moral principle and manhood. But let him not be afraid to assert himself when honor is at stake, or an ideal is involved. There is a vital quality of religion that no man is above; and very low, indeed, is the man in whom the religious consciousness is dead. Hold stoutly to vital religion. The views of a college man with respect to non-essentials of theology and outward forms and habits of worship are likely to undergo a great change; but it will grow constantly plainer to him that the soul can find no substitute for religion. And most likely, as the years pass in college he will discover that, while his religious life has grown less dogmatic, less assertive, and more reticent, it has at the same time grown deeper and more assured, more tolerant, and natural, and helpful. Every student will need what aid he can get from the Sabbath, from the enlightened religious services that a college town always enjoys, from the meetings of the Christian Associations of the college, from companionship and conversation with earnest and devout men among the upper classes and the faculty, and from the reading of religious books — as, for example, the poetry of Whittier and Tennyson, the sermons

of Robertson, Beecher, and Phillips Brooks, and the essays of Drummond, Robert Speer, Dr. Grenfell, Washington Gladden, President Hyde of Bowdoin, and President King of Oberlin. These are only a few of the many sane, manly, and modern religious writings that are available in every college library.

VI

THE GOOD DRUDGE HABIT

The habits that a Freshman forms are likely to go with him all through life to help him or to hinder him. Already he is an organized bundle of habits, for better or for worse; and in many respects he will never change his ways. But he *may* readily do so; for he is at an age when habits are extremely easy to take on or to lay off. His sense-impressions are so vivid and his nerve-tissue so plastic that he can remake himself into what he will, as easily as a workman can mold putty into this shape or that. Most of his personal habits are fixed and will never be reshaped. If he gives scrupulous attention to the care of his person now—in matters of the toilet and affairs of dress—he will be tidy and orderly and cleanly when he is threescore and ten. If he is indifferent to these things now, he will be still more indifferent to them when he grows old. And so with table and drawing-room manners, with habits of articulation, pronunciation, spelling, and handwriting; the youth who has been correctly trained in all these things may let his will go on a vacation or set it to work at some higher employment, for the good drudge Habit will demand no holiday, but will stay right by his task. It is not too late for the college student to remedy any defects of dress or behavior that he

may grow conscious of as he meets his more fortunate fellows. He is at college for the purpose of remedying such defects. Let him mark closely the dress, the bearing, the speech of such acquaintances — students as well as instructors — as have won his approval; and, while not imitating them in any slavish way, let him note and emulate whatever in them he may find worthy of emulation in taste, ease, grace, or high-breeding.

And particularly, it is during the Freshman year that a youth must catch the secret of study. Few high school pupils have learned how to study. But it is now of the highest importance that the art of study be mastered. This is the appropriate time to establish correct mental habits. Mental discipline is quite as large an element in education as the storing away of facts — the gaining of knowledge. So if the student would avoid waste of time and frequent failure, he ought to learn to study at once. He must learn how to lay hold of a given lesson and how to lay it out. He must define to himself what the subject of the lesson is that he has been set to learn — what lies at the heart of it. He must set about the mastery of the lesson systematically. It will not do merely to define the main purpose of the lesson; he must analyze it, so that he may come to a clear knowledge of what is most important and what is least important. Let him concentrate the whole power of his mind upon the task that he has before him at any given time. He will thus save untold waste. If the subject is not naturally interesting to him, he may be able to bring to the problem some interest from outside — the desire to outstrip a rival, or to give pleasure to his parents by getting good marks, or to convince an instructor of his real power. A young student must often take himself sternly in hand, and by a sheer

act of will-power compel himself to march up to a difficult task and do it. And one must learn thoroughness as well as concentration. There must be no slackness or vagueness. Every inch of the ground must be covered; and the student must see clearly the logical connection of one part with another.

Study hours should be carefully planned. The hardest problems should be attacked when the mind is freshest, and odd bits of time should be utilized. It is well to remember that the mind sometimes gets so fagged that it is unable to do its work well, and that at such times it is better to give over mental effort for a season. Later it may be resumed with added zest and reinforced energies. Sometimes it will be best for the student to throw aside his books entirely for a good walk or a lively game in the open air. It would be a safe and innocent thing once in a while to go to bed at ten or eleven o'clock for a good night's sleep. The student should learn how to sprout a thought and then go away and let it develop in its own way—how to let the mind lie passive as well as how to spur it actively to its goal. The thoroughly trained mind may be trusted to carry on much of its work without conscious supervision. It is sometimes a merit to cram, but never except as a practice in discipline, or in case of an honest exigency. And examinations are not without their solid benefits to the serious student. They give training in analysis and proportion; they compel one to discriminate; they demand that the mind grasp and hold a vast quantity of information for instant use; and they train the mind to sustained effort. An examination tests one's bottom, and gives evidence of one's staying powers.

VII

THE CHOICE OF STUDIES AND THE CHOICE OF A LIFE-WORK

It is exceedingly difficult to offer definite advice to the student concerning the choice of his studies; for educators are far from agreed upon this point. Besides, each student must be dealt with as a unit. The conditions that enter into the making of a choice are not the same with any two Freshmen. One thing is certain, though: the student should exercise the greatest possible care in choosing his course of study. Before coming to college he will have sought the advice of parents and friends and teachers, and will himself have tried to find out what his own purposes, tastes, and aptitudes are. After he has reached college, he should not hesitate to go to members of the faculty with his perplexities. Most instructors are eager to help a student and are glad to be on confidential terms with him. "But after all it is you who are to live the life, and do the work, and succeed or fail;" so in the long run the student must make the decisions. But, on the other hand, few decisions are final and fateful. Life is a running battle, and many a brave and intelligent fighter shifts his position in the midst of the fray. It may be that before you have completed your first term you will discover that you have not chosen wisely. Or, perhaps, you will find by the time you have finished your Freshman year that you are on the wrong track. It will not be too late to change your course. What you do, do thoroughly and well, whether you like it or not; and do not drop any work, or make any alteration in your plans, without full and friendly consultation with the officers and instructors involved in the change.

Many Freshmen come up to college with a perfectly definite life purpose before them. They have decided what profession to pursue or what business to engage in, and they know just what course they want to take. It gives one a comfortable feeling to have this momentous question of a life occupation disposed of once for all. But you should not be unduly anxious if you have not yet decided what you will make of yourself. One of the best things about a college course is that it affords just the leisure that a young man needs to test himself, to think over his problems, and to discover what he is fitted for. It is a time of growth, expansion, and enlarging vision; and it is very likely that when you fully come to yourself you will choose at higher intellectual and moral altitudes than would have been possible without the influence of the college. And here, again, it may help you to know that many — very many — of the wisest and most successful men, even after they have completed a college course, have not at once found their true sphere of activity. Some of them have stumbled and blundered more than once before they have been able to gain sure footing in the profession for which at last they find themselves precisely fitted. And no honestly-chosen course of study faithfully carried through, whether pursued for a year or four years, proves a waste. You have gained fair returns and have secured discipline, and in the end there will be little that cannot be turned to account.

A vital and determining question that the Freshman may well ask himself at the outset is: Do I want to choose my studies primarily with reference to my life vocation, or shall I select with chief reference to general culture? One of the dangers for the man who has decided upon his life-work before he comes to college is that he may from the very

first direct his attention too exclusively to vocational subjects. If he begins to specialize early in his course, he will fail to secure the breadth and the rich humanizing influences that a college man is privileged to have. It is to be feared that such a student will fail to lay a foundation broad enough for future eminence in his profession; and it is certain that he will realize when it is too late that he has in large measure cut himself off from the full enjoyment of a cultivated life. He will feel the lack of "sweetness and light." There is a probability, even, that he may find himself unfitted to respond fully to the social and civic forces that surge at his very door and electrify the very air he breathes.

On the other hand, the youth who chooses the all-around courses must beware lest he become a mere loiterer by the way, selecting here a course and there a course without plan or objective. It is all too easy for him to become an elegant idler — without logical training, without moral discipline, without any symptom of sound scholarship. The elective system sometimes proves a curse to the idle, ill-grounded, ill-guided Freshman. It seems hardly possible that any youth could enter college with such notions of the academic life as those portrayed by Mr. Birdseye in his book on *Individual Training in Our Colleges*. But Mr. Birdseye is serious and well-informed, and recently through his books has rendered valuable service to higher education in America. And what he says is constantly being emphasized by the leading college authorities. Here is the passage that I have in mind, "In the absence of any official guide, a considerable proportion of the students have devised a theory and plan of their own about as follows: 'We are aiming to get a diploma. A certain number of marks by the faculty, based upon cramming, examinations, and not

overcutting, give us a diploma. There are many things in college more important than studies—although they do not count in getting a diploma—such as athletics, from the bleachers or on the team; social, fraternity, literary, and other practical subjects; and seeing life, which may mean some vice—gambling, intoxication, and a little extra loafing for good measure and to carry out what we understand to be college custom. For these reasons, we shall elect the “softest” courses, with the easiest professors, and coming if possible in the mornings, so that we can have all our afternoons and evenings for more important duties. With “trots” and other extraneous helps, we can easily get the marks which give us a diploma.’”

There is, as a matter of fact, no reason why a student already definitely bent toward a specialty, whether professional or business, may not elect largely from the cultural and humanizing subjects that lie at the foundation of any truly liberal education, and still during the last two years in college choose with constantly narrowing accuracy with reference to his specialty. Nor, on the other hand, is there any reason why one who believes that in the languages (in English and the classics, particularly), in history and civics and sociology and philosophy lie the essentials of a genial and humane culture, should not elect generously from mathematics and the physical sciences—why he might not, indeed, in some one field of science gain not only some knowledge of the fundamental principles of that study, but also some idea of scientific method, some skill in technique, some salutary sense of the rigor and accuracy that go to the making of a scientist.

Finally, the Freshman is not too young to realize that any college course is a failure that does not fit a student for

service to society. Boys of sixteen and eighteen years have borne arms upon the field of battle, and have sought and found glorious death in order to insure stability and perpetuity to the nation, to win justice for the oppressed, and to keep the flame of liberty alive in the hearts of men. Why should you not strive with equal ardor and unselfishness to keep the holy flame of truth burning before the eyes of men; to keep our civil institutions unsullied from the touch of dishonor; and to push aside the hand of injustice and cruelty that brings the cry of anguish from the weak and the helpless, and that lays upon the bent and bruised back of ignorant labor burdens that are too heavy to be borne? To you much has been given; and it is only fair that you should give much in return. Your education has cost vastly more than came out of your own pocket or out of the pockets of your parents, lavish as they have been. You do not know just what service you will be called upon to render a quarter of a century from now. It may be obscure; it may be distinguished. But, be the demand that the State is to make upon you in the future what it may, the service that you owe just now, in this Freshman year of your college course, is that of organizing within the round of that *self* that you call *yours* such physical stamina, such intellectual vigor, such seasoned moral fibre, such ideals of purity, justice, and honor, and such a disciplined and fearless will as shall prepare you to meet the emergency when the bugle note of duty sounds — no matter how remote the day, no matter where the battle-line may be drawn, no matter what the assignment may be. Your duty now is to be master of yourself that you may later be the master of destiny — the champion of mankind in its hour of need.

THE AFTER-SELF ¹

BY PRESIDENT DAVID STARR JORDAN

Leland Stanford Junior University

THE young man's first duty is toward his after-self. So live that your after-self, the man you ought to be, may be possible and actual. Far away in the twenties, the thirties of our century, he is awaiting his time. His body, his brain, his soul are in your boyish hands today. He cannot help himself. Will you hand over to him a brain unspoiled by lust or dissipation, a mind trained to think and act, a nervous system true as a dial in its response to environment? Will you, college boy of the twentieth century, let him come in his time as a man among men? Or will you throw away his patrimony? Will you turn over to him a brain distorted, a mind diseased, a will untrained to action, a spinal cord grown through and through with the vile harvest we call "wild oats"? Will you let him come taking your place, gaining through your experiences, your joys, building on them as his own? Or will you wantonly fling it all away, careless that the man you might have been shall never be?

In all our colleges we are taught that the athlete must not break training rules. The pitcher who smokes a cigarette gives away the game. The punter who dances loses the goal, the sprinter who takes a convivial glass of beer breaks

¹ Reprinted from *The Voice of the Scholar*, page 237, by special permission of the author and publishers, Paul Elder and Company, San Francisco.

no record. His record breaks him. Some day we shall realize that the game of life is more strenuous than the game of football, more intricate than pitching curves, more difficult than punting. We should keep in trim for it. We must remember training rules. The rules that win the football game are good also for success in business. Half the strength of young America is wasted in the dissipation of drinking or smoking. If we keep the training rules in literal honesty we shall win a host of prizes that otherwise we should lose. Final success goes to the few, the very few, alas, who throughout life keep mind and soul and body clean.

AN ADDRESS TO FRESHMEN ¹

BY PRESIDENT WILLIAM DEWITT HYDE

Bowdoin College

A GRADUATE of Christ Church College, Oxford, recently remarked to me, "One can have such a good time at Oxford that it's a great waste of opportunity to work." The humor of this remark, however, was turned to pathos when his wife told me sadly that, "An Oxford training does not fit a man for anything. There is absolutely nothing my husband can do;" and then I learned that the only thing this thirty-year-old husband and father had ever done was to hold a sinecure political office, which he lost when the Conservative party went out of power; and the only thing he ever expected to do was to loaf about summer resorts in summer, and winter resorts in winter, until his father should die and leave him the estate. Fortunately, American society does not tolerate in its sons so worthless a career; yet the philosophy of college life which was behind that worthlessness, translated into such phrases as "Don't let your studies interfere with your college life," and "C is a gentleman's grade," is coming to prevail in certain academic circles in America.

Put your studies first; and that for three reasons: First, you will have a better time in college. Hard work is a necessary background for the enjoyment of everything else. Second, after the first three months you will stand better

¹ Reprinted from *The Independent*, October 1, 1908, by special permission of the author and the publishers.

with your fellows. At first there will appear cheaper roads to distinction, but their cheapness is soon found out. Scholarship alone will not give you the highest standing with your fellows; but you will not get their highest respect without showing that you can do well something that is intellectually difficult. Third, your future career depends upon it. On a little card, five by eight inches, every grade you get is recorded. Four or eight years hence, when you are looking for business or professional openings, that record will, to some extent, determine your start in life. But you are making a more permanent record than that upon the card; you are writing in the nerve cells and films of your brain habits of accuracy, thoroughness, order, power, or their opposites; and twenty, thirty, forty years hence that record will make or mar your success in whatever you undertake. . . .

Make up your minds, then, to take a rank of A in some subject, at least B in pretty nearly everything, and nothing lower than C in anything. If you ask why I place such stress upon these letters, let me tell you what they mean.

A means that you have grasped a subject; thought about it; reacted upon it; made it your own; so that you can give it out again with the stamp of your individual insight upon it.

B means that you have taken it in, and can give it out again in the same form in which it came to you. In details, what you say and write sounds like what the A man says and writes; but the words come from the book or the teacher, not from you. No B man can ever make a scholar; he will be a receiver rather than a giver, a creature rather than a creator to the end of his days.

C means the same as B, only that your second-hand information is partial and fragmentary, rather than complete.

D means that you have been exposed to a subject often enough and long enough to leave on the plate of your memory a few faint traces which the charity of the examiner is able to identify. Poor and pitiful as such an exhibition is, we allow a limited number of D's to count toward a degree.

E means total failure. Two E's bring a letter to your parents, stating that if the college were to allow you to remain longer, under the impression that you are getting an education, it would be receiving money under false pretenses.

Please keep these definitions in mind, and send a copy to your parents for reference when the reports come home.

Whatever you do, do not try to cheat in examinations or written work. If you succeed, you write *fraud, fraud, fraud*, all over your diploma; and if you get caught — there will be no diploma for you.

Your own interests and tastes are so much more important factors than any cut-and-dried scheme of symmetrical development, that we leave you free to choose your studies. At the same time, the subjects open to choice are so limited by conflict of hours, and the requirement of a major and minors, that you can hardly miss the two essentials of wise choice: the consecutive, prolonged, concentrated pursuit of one or two main subjects, and some slight acquaintance with each of the three great human interests — language and literature, mathematics and science, and history, economics, and philosophy.

Having put study first, college life is a close second. College is a world artificially created for the express purpose of your development and enjoyment. You little dream how rich and varied it is. I was myself surprised in looking over

the records of the last senior class to find that the members of that class won four hundred and sixty-seven kinds of connection and distinction of sufficient importance to be printed in the official records of college achievement. On the other hand, I was a little disappointed to find that one hundred and forty-two of these distinctions were taken by five men, showing that the law, "to him that hath shall be given," applies in college as well as out of it. Some colleges, like Wellesley, have attempted to limit the number of these non-academic points an individual student may win.

Aim to win some of these distinctions, but not too many. Concentrate on a few for which you care most. Do you ask what they are?

There are eight fraternities, each with its own chapter house and its committees for the control of its own affairs; twelve sectional clubs, covering most of the geographical divisions from which students come; a Christian Association of which a majority of the students, and a much larger majority of the best fellows among them, are members, and which every one of you ought to join, who wants help and support in living the life you know you ought to live, and is willing to give help and support to others in living the Christian life in college. There is the Deutscher Verein, the Rumania, the History Club, the Good Government Club, the Chemical Club, devoted to their special subjects; the Ibis, which represents the combination of high scholarship and good fellowship, and whose members, together with the undergraduate members of Phi Beta Kappa, are *ex-officio* members of the Faculty Club, a literary club composed of members of the faculty and their families.

There is the Inter-fraternity Council; the Athletic Council; the Debating Council; there is the Glee Club; the

Mandolin Club; the Chapel Choir; the College Band; the Dramatic Club; the Press Club; the Republican Club; the Democratic Club. We have three papers — the *Quill* for literature, the *Orient* for college news, the *Bugle* for college records and college humor.

Besides, there are public functions with their management and their subjects: rallies, banquets, assemblies, Ivy Day, Class Day, college teas, fraternity house parties.

Last, but not least, come athletics — baseball, football, track, tennis, hockey, fencing, gymnastics, cross-country running, with first and second teams, captains, managers, and assistant managers.

With all these positions open to you in these four years, every one of you ought to find opportunity for association with your fellows in congenial pursuits, and training in leadership and responsibility in the conduct of affairs.

As I said at the outset, taken apart from study these things are trivial, and absorption in them amounts to little more than mental dissipation; but taken in their proper relation to study, which is your main purpose here, the social experience and capacity for leadership they give are so valuable that if you take no responsible and effective part in them, you miss the pleasantest, and in some respects the most profitable, part of what the college offers you.

I suppose I ought to say a word about college temptations, though the man who enters heartily into his studies and these college activities will not be much troubled by them. That is the case with nine-tenths of the men who come here. But in every class there is a weaker 5 or 10 per cent, and I suppose this class of 1912 is no exception. I suppose there are half a dozen of you who are already addicted to vicious practices, and half a dozen more weak fellows, who

are only waiting for some one to show them the ways before they fall into them. I do not know yet who you are; but within three months everybody here will know. Then we shall first do our best to change your plans; and if that fails, we shall promptly ask you to withdraw. You all know what these temptations are: they are the temptations of youth everywhere — smoking, drinking, gambling, and licentiousness.

To begin with the least serious. There is nothing intrinsically evil in the inhalation and exhalation of smoke. Among mature men, some are seriously injured by it; some apparently suffer little harm. Almost all youth of your age are seriously injured by it.

In the first place, it weakens your heart and makes your nerves unsteady. In the second place, it destroys your power of mental concentration and makes you scatter-brained. These evils are generally recognized. The most serious consequence is not so well understood. The habitual smoker tends to become content with himself as he is; he ceases to wrestle earnestly with moral and spiritual problems; falls out of the struggle to be continually rising to heights hitherto unattained. For the man who has attained his moral growth (if such there are) it is not so serious; but for the youth of eighteen or twenty it means arrested spiritual development, and an easy-going compromise instead of the more strenuous ideals. As you go up in a college class the proportion of smokers falls; as you go down it rises. While the college does not make smoking directly a subject of discipline, it is no mere coincidence that nineteen out of every twenty students whom we send away for either low scholarship or bad conduct are inveterate smokers. If you train for an athletic team you have to stop smoking

while training; if you are in the most earnest training for life, you will leave it off altogether.

Drinking, however excusable a consolation for hard-worked men of meager mental and social resources, is inexcusable in young men with such a wealth of physical, intellectual, and social stimulus about them as college life affords. All the fraternities, of their own accord, exclude it from their chapter houses. Any student who injures himself or others by this abuse is liable to be requested to leave college in consequence.

Gambling is so utterly inconsistent with the purpose for which you come here, and, when once started, spreads so insidiously, that we always remove a student from college as soon as we discover that he is addicted to the practice.

Licentiousness involves such a hardening of the heart of the offender, such an anti-social attitude toward its victims, and brings such scandal on the institution, that "notorious and evil livers" in this respect are quietly, but firmly, removed at the end of an early year or term.

In dealing with these offenses, we hold no legal trial; we offer no formal proof of specific acts; we do not always succeed in convincing either students or parents of the justice of our action. In a little community like this, where everybody is intensely interested in everybody else, we know with absolute certainty; and, while we cannot always make public the nature and source of our knowledge, we act upon that knowledge. If this seems arbitrary, if any one of you does not wish to take his chance of summary dismissal without formal proof of specific charges, on any of these grounds, he would do well to withdraw voluntarily at the outset. This is our way of dealing with these matters, and you have fair warning in advance.

Such is college work; college life; college temptations. A million dollars in building and equipment; another million of endowment; the services of a score of trained, devoted teachers; the fellowship of hundreds of alumni, fellow-students, and younger brothers who will follow in the years to come; the name and fame, the traditions and influence of this ancient seat of learning; the rich and varied physical, intellectual, and social life among yourselves — all are freely yours on the single condition that you use them for your own good, and to the harm of no one else.

THE PRINCIPLE OF HABIT¹

ITS ETHICAL AND PEDAGOGICAL IMPORTANCE

BY WILLIAM JAMES

"HABIT a second nature! Habit is ten times nature," the Duke of Wellington is said to have exclaimed; and the degree to which this is true no one probably can appreciate as well as one who is a veteran soldier himself. The daily drill and the years of discipline end by fashioning a man completely over again, as to most of the possibilities of his conduct.

"There is a story," says Professor Huxley, "which is credible enough, though it may not be true, of a practical joker who, seeing a discharged veteran carrying home his dinner, suddenly called out, 'Attention!' whereupon the man instantly brought his hands down, and lost his mutton and potatoes in the gutter. The drill had been thorough, and its effects had become embodied in the man's nervous structure."

Riderless cavalry-horses, at many a battle, have been seen to come together and go through their customary evolutions at the sound of the bugle call. Most domestic beasts seem machines almost pure and simple, undoubtingly, unhesitatingly doing from minute to minute the duties they have been taught, and giving no sign that the possibility of an alternative ever suggests itself to their minds. Men

¹ Reprinted by permission from *Psychology, Briefer Course*, copyright, 1892, by Henry Holt and Co., New York.

grown old in prison have asked to be readmitted after being once set free. In a railroad accident a menagerie tiger, whose cage had broken open, is said to have emerged, but presently crept back again, as if too much bewildered by his new responsibilities, so that he was without difficulty secured.

Habit is thus the enormous fly-wheel of society, its most precious conservative agent. It alone is what keeps us all within the bounds of ordinance, and saves the children of fortune from the envious uprisings of the poor. It alone prevents the hardest and most repulsive walks of life from being deserted by those brought up to tread therein. It keeps the fisherman and the deck-hand at sea through the winter; it holds the miner in his darkness, and nails the countryman to his log-cabin and his lonely farm through all the months of snow; it protects us from invasion by the natives of the desert and the frozen zone. It dooms us all to fight out the battle of life upon the lines of our nurture or our early choice, and to make the best of a pursuit that disagrees, because there is no other for which we are fitted, and it is too late to begin again. It keeps different social strata from mixing. Already at the age of twenty-five you see the professional mannerism settling down on the young commercial traveler, on the young doctor, on the young minister, on the young counsellor-at-law. You see the little lines of cleavage running through the character, the tricks of thought, the prejudices, the ways of the "shop," in a word, from which the man can by-and-by no more escape than his coat-sleeve can suddenly fall into a new set of folds. On the whole, it is best he should not escape. It is well for the world that in most of us, by the age of thirty, the character has set like plaster, and will never soften again.

If the period between twenty and thirty is the critical one in the formation of intellectual and professional habits, the period below twenty is more important still for the fixing of *personal* habits, properly so called, such as vocalization and pronunciation, gesture, motion, and address. Hardly ever is a language learned after twenty spoken without a foreign accent; hardly ever can a youth transferred to the society of his betters unlearn the nasality and other vices of speech bred in him by the associations of his growing years. Hardly ever, indeed, no matter how much money there be in his pocket, can he ever learn to *dress* like a gentleman born. The merchants offer their wares as eagerly to him as to the veriest "swell," but he simply *cannot* buy the right things. An invisible law, as strong as gravitation, keeps him within his orbit, arrayed this year as he was the last; and how his better clad acquaintances contrive to get the things they wear will be for him a mystery to his dying day.

The great thing, then, in all education, is to *make our nervous system our ally instead of our enemy*. It is to fund and capitalize our acquisitions, and live at ease upon the interest of the fund. *For this we must make automatic and habitual, as early as possible, as many useful actions as we can,* and guard against the growing into ways that are likely to be disadvantageous to us, as we should guard against the plague. The more of the details of our daily life we can hand over to the effortless custody of automatism, the more our higher powers of mind will be set free for their own proper work. There is no more miserable human being than one in whom nothing is habitual but indecision, and for whom the lighting of every cigar, the drinking of every cup, the time of rising and going to bed every day, and the

beginning of every bit of work, are subjects of express volitional deliberation. Full half the time of such a man goes to the deciding, or regretting, of matters which ought to be so ingrained in him as practically not to exist for his consciousness at all. If there be such daily duties not yet ingrained in any one of my readers, let him begin this very hour to set the matter right.

In Professor Bain's chapter on "The Moral Habits" there are some admirable practical remarks laid down. Two great maxims emerge from his treatment. The first is that in the acquisition of a new habit, or the leaving off of an old one, we must take care to *launch ourselves with as strong and decided an initiative as possible*. Accumulate all the possible circumstances which shall reinforce the right motives; put yourself assiduously in conditions that encourage the new way; make engagements incompatible with the old; take a public pledge, if the case allows; in short, envelop your resolution with every aid you know. This will give your new beginning such a momentum that the temptation to break down will not occur as soon as it otherwise might; and every day during which a breakdown is postponed adds to the chances of its not occurring at all.

The second maxim is, *Never suffer an exception to occur till the new habit is securely rooted in your life*. Each lapse is like the letting fall of a ball of string which one is carefully winding up; a single slip undoes more than a great many turns will wind again. *Continuity* of training is the great means of making the nervous system act infallibly right. As Professor Bain says:

"The peculiarity of the moral habits, contradistinguishing them from the intellectual acquisitions, is the presence of two hostile powers, one to be gradually raised into the

ascendant over the other. It is necessary, above all things, in such a situation, never to lose a battle. Every gain on the wrong side undoes the effect of many conquests on the right. The essential precaution, therefore, is so to regulate the two opposing powers that the one may have a series of uninterrupted successes until repetition has fortified it to such a degree as to enable it to cope with the opposition, under any circumstances. This is the theoretically best career of mental progress."

The need of securing success at the *outset* is imperative. Failure at first is apt to damp the energy of all future attempts, whereas past experiences of success nerve one to future vigor. Goethe said to a man who consulted him about an enterprise but mistrusted his own powers, "Ach! you need only blow on your hands!" And the remark illustrates the effect on Goethe's spirits of his own habitually successful career.

The question of "tapering-off" in abandoning such habits as drink and opium indulgence comes in here, and is a question about which experts differ within certain limits, and in regard to what may be best for an individual case. In the main, however, all expert opinion would agree that abrupt acquisition of the new habit is the best way, if there be a real possibility of carrying it out. We must be careful not to give the will so stiff a task as to insure its defeat at the very outset; but, provided one can stand it, a sharp period of suffering, and then a free time, is the best thing to aim at, whether in giving up a habit like that of opium, or in simply changing one's hours of rising or of work. It is surprising how soon a desire will die of inanition if it be *never fed*.

"One must first learn, unmoved, looking neither to the

right nor left, to walk firmly on the straight and narrow path, before one can begin 'to make one's self over again.' He who every day makes a fresh resolve is like one who, arriving at the edge of the ditch he is to leap, forever stops and returns for a fresh run. Without *unbroken* advance there is no such thing as *accumulation* of the ethical forces possible, and to make this possible, and to exercise us and habituate us in it, is the sovereign blessing of regular work."¹

A third maxim may be added to the preceding pair: *Seize the very first opportunity to act on every resolution you make, and on every emotional prompting you may experience in the direction of the habits you aspire to gain.* It is not in the moment of their forming, but in the moment of their producing *motor effects*, that resolves and aspirations communicate the new "set" to the brain. As the author last quoted remarks:

"The actual presence of the practical opportunity alone furnishes the fulcrum upon which the lever can rest, by means of which the moral will may multiply its strength, and raise itself aloft. He who has no solid ground to press against will never get beyond the stage of empty gesture-making."

No matter how full a reservoir of *maxims* one may possess, and no matter how good one's *sentiments* may be, if one have not taken advantage of every concrete opportunity to act, one's character may remain entirely unaffected for the better. With mere good intentions, hell is proverbially paved. And this is an obvious consequence of the principles we have laid down. A "character," as J. S. Mill says, "is a completely fashioned will"; and a will, in the sense in which he means it, is an aggregate of tendencies

¹ J. Bahnsen, *Beiträge zu Charakterologie*, (1867), vol. i. p. 209.

to act in a firm and prompt and definite way upon all the principal emergencies of life. A tendency to act only becomes effectively ingrained in us in proportion to the uninterrupted frequency with which the actions actually occur, and the brain "grows" to their use. When a resolve or a fine glow of feeling is allowed to evaporate without bearing practical fruit it is worse than a chance lost. It works so as positively to hinder future resolutions and emotions from taking the normal path of discharge. There is no more contemptible type of human character than that of the nerveless sentimentalist and dreamer who spends his life in a weltering sea of sensibility and emotion, but who never does a manly concrete deed. Rousseau, inflaming all the mothers of France by his eloquence to follow Nature and nurse their babies themselves, while he sends his own children to the foundling hospital, is the classical example of what I mean. But everyone of us in his measure, whenever, after glowing for an abstractly formulated Good, he practically ignores some actual case among the squalid "other particulars" of which that same Good lurks disguised, treads straight on Rousseau's path. All Goods are disguised by the vulgarity of their concomitants, in this work-a-day world; but woe to him who can only recognize them when he thinks them in their pure and abstract form! The habit of excessive novel-reading and theatre-going will produce true monsters in this line. The weeping of the Russian lady over the fictitious personages in the play, while her coachman is freezing to death on his seat outside, is the sort of thing that everywhere happens on a less glaring scale. Even the habit of excessive indulgence in music, for those who are neither performers themselves nor musically gifted enough to take it in a purely intellectual way, has

probably a relaxing effect upon the character. One becomes filled with emotions which habitually pass without prompting to any deed, and so the inertly sentimental condition is kept up. The remedy would be, never to suffer one's self to have an emotion at a concert, without expressing it afterward in *some* active way. Let the expression be the least thing in the world — speaking genially to one's grandmother, or giving up one's seat in a horse-car, if nothing more heroic offers — but let it not fail to take place.

These latter cases make us aware that it is not simply *particular lines* of discharge, but also *general forms* of discharge, that seem to be grooved out by habit in the brain. Just as, if we let our emotions evaporate, they get into a way of evaporating; so there is reason to suppose that if we often flinch from making an effort, before we know it the effort-making capacity will be gone; and that, if we suffer the wandering of our attention, presently it will wander all the time. Attention and effort are, as we shall see later, but two names for the same psychic fact. To what brain processes they correspond we do not know. The strongest reason for believing that they do depend on brain-processes at all, and are not pure acts of the spirit, is just this fact, that they seem in some degree subject to the law of habit, which is a material law. As a final practical maxim, relative to these habits of the will, we may, then, offer something like this: *Keep the faculty of effort alive in you by a little gratuitous exercise every day.* That is, be systematically ascetic or heroic in little unnecessary points, do every day or two something for no other reason than that you would rather not do it, so that when the hour of dire need draws nigh it may find you not unnerved and untrained to stand the test. Asceticism of this sort is like the insurance which

a man pays on his house and goods. The tax does him no good at the time, and possibly may never bring him a return. But if the fire *does* come, his having paid it will be his salvation from ruin. So with the man who has daily inured himself to habits of concentrated attention, energetic volition, and self-denial in unnecessary things. He will stand like a tower when everything rocks around him, and when his softer fellow-mortals are winnowed like chaff in the blast.

The physiological study of mental conditions is thus the most powerful ally of hortatory ethics. The hell to be endured hereafter, of which theology tells, is no worse than the hell we make for ourselves in this world by habitually fashioning our characters in the wrong way. Could the young but realize how soon they will become mere walking bundles of habits, they would give more heed to their conduct while in the plastic state. We are spinning our own fates, good or evil, and never to be undone. Every smallest stroke of virtue or of vice leaves its never-so-little scar. The drunken Rip Van Winkle, in Jefferson's play, excuses himself for every fresh dereliction by saying, "I won't count this time!" Well! he may not count it and a kind heaven may not count it; but it is being counted none the less. Down among his nerve-cells and fibers the molecules are counting it, registering it, and storing it up to be used against him when the next temptation comes. Nothing we ever do is, in strict scientific literalness, wiped out. Of course this has its good side as well as its bad one. As we become permanent drunkards by so many separate drinks, so we become saints in the moral, and authorities and experts in the practical and scientific spheres, by so many separate acts and hours of work. Let no youth have any anxiety

about the upshot of his education, whatever the line of it may be. If he keep faithfully busy each hour of the working day, he may safely leave the final result to itself. He can with perfect certainty count on waking up some fine morning, to find himself one of the competent ones of his generation, in whatever pursuit he may have singled out. Silently, between all the details of his business, the *power of judging* in all that class of matter will have built itself up within him as a possession that will never pass away. Young people should know this truth in advance. The ignorance of it has probably engendered more discouragement and faint-heartedness in youths embarking on arduous careers than all other causes put together.

HOW TO STUDY

By FRANCIS CUMMINS LOCKWOOD

I

THE American wizard, Thomas Edison, frequently becomes so absorbed in the work of his laboratory that he forgets all about his meals, and occasionally even goes without sleep for long periods in order that he may hold his mind uninterruptedly to a given task. Sir William Hamilton, the great Scotch philosopher, gives like instances of mental absorption on the part of certain scholars of the past. Some of these stories are so interesting that they are worth repeating here.

“Archimedes, it is well known, was so absorbed in a geometrical meditation that he was first aware of the storming of Syracuse by his own death-wound, and his exclamation on the entrance of Roman soldiers was — *Noli turbare circulos meos*. In like manner, Joseph Scaliger, the most learned of men, when a Protestant student in Paris, was so engrossed in the study of Homer that he became aware of the massacre of St. Bartholomew, and of his own escape, only on the day subsequent to the catastrophe. The philosopher, Carneades, was habitually liable to fits of meditation so profound that, to prevent him from sinking from inanition, his maid found it necessary to feed him like a child. And it is reported of Newton that, while engaged in his mathematical researches, he sometimes forgot to dine. Cardan, one of the most illustrious of philosophers

and mathematicians, was once, upon a journey, so lost in thought that he forgot both his way and the object of his journey. To the question of his driver whither he should proceed, he made no answer, and when he came to himself at nightfall, he was surprised to find the carriage at a standstill and directly under a gallows."

No doubt such stories seem queer to the American college student of our day, for we are not accustomed to associate mental application with the term college student. Says Professor Lounsbury of Yale — and he is writing about a college student — "We must view with profound respect the infinite capacity of the human mind to resist the introduction of useful knowledge." And it was another New England professor who said to me in a letter not long ago, "We take great care of the Freshman's body now-a-days — make him strip and pass a physical examination, and thump him all over, then give him required courses in hygiene, and make him go through stunts in the gymnasium every day. I think it is time we taught him to use what he calls his mind."

I wonder sometimes if we parents and professors are not ourselves a good deal to blame for the thriftless mental habits of our students. It seems to me that we have taken too little pains to direct them in the art of study and to come to some semblance of an agreement as to what constitutes the essentials of collegiate education. Not undeserved was that biting sarcasm in a British newspaper to the effect "that in University matters, as in social and political affairs, America does not know where she is going, but is determined to get there." Indeed, it was a professor who wrote, "The collective unwisdom of a college faculty is not often exceeded by an individual student." And as an indication of

the fact that college authorities may be very obtuse, and that college students may be very acute, I may allude to that copy of the catalogue of a certain institution, wherein some student had added as rule 119 in the regulations, "Any student who can understand these rules will be granted a degree without further examination." At any rate, whoever is at fault, it is high time that we should set ourselves to remedy defects that are apparent to all.

If a man is not a student, he has no right to a place in college. A man gets into a college in order to learn, just as a seaman gets into a ship in order to sail the seas. If the sailor will not go aloft — will not rub and scrub — he has no right to be on board. And just so a student, if he will not read and write, and grub and think, has no excuse whatever for being in a college. The college that allows men that do not study, and who have no intention of studying, to remain enrolled in long-continued idleness is degrading itself, robbing the student, and betraying the state.

II

And what are the real aims of study? The object of study is, in the first place, to get fast and firm possession of facts — facts of spelling, reading, mathematics, composition, history, language, geography, and the like. It is highly desirable that we should know how to spell *Chicago* and *business*; *Boston* and *brains*; and that we should know for all time. We want to know once for all that seven times nine are sixty-three; that Abraham Lincoln signed the Emancipation Proclamation; that an island is a body of land completely surrounded by water; and that a proper name should begin with a capital letter. Many, many,

minute facts, as well as certain connected bodies of truth, should be embedded in one's memory as deeply and securely as a bullet that has lodged in the heart of a growing tree. And one should master certain processes of thought, and grip a few great underlying and unchanging principles of life and conduct.

Yet the chief value of study does not lie in the stowing away of facts and principles. You study for discipline. You study in order that you may become a student, just as you exercise, not for recreation alone, but that you may become an athlete. In making yourself a student you are making yourself fit for the fierce intellectual encounters of middle life. No time for training then! And woe to him whose brain-fiber is flabby then, whose mental processes are slow and hazy and uncertain! Your mind must work with the force and steadiness of a piston-rod; must clutch like a vise. You will be pitted against antagonists worthy of your mettle. They will not sleep; nor will they let you sleep during the long day of strain in the court-room, on the stump, in the halls of legislation, at the editorial desk, in the counting-house, where the tides of traffic run full and hot, and where masters of finance and captains of industry sit secretly, silently, astutely making or marring your fortunes or the fortunes of weak men and women whose champion you are. It may be that with knife or drug you shall suddenly be set in the lonely night to hold Death at bay in some terrified home, or on some tragic highway or byway. You are winning these crucial contests now by the precision and the promptness and the thoroughness that you are working into your higher nerve centers; by the severe training that you are giving yourself in attention, decision, mental alertness, and moral control.

Again, it is worth while to study because there is nothing in the world so glorious as truth, nothing so fascinating as the pursuit of wisdom. Mind alone can unlock the meaning of the world, for the foundations of the universe are laid in spirit. If we would be free we must think ourselves free. To the degree that we are ignorant we are slaves — slaves to wind and wave, to time and tide, to sin and pain, to man and devil and microbe. But to the extent that we study and think and gain wisdom we drive back the barriers of darkness and come into the full freedom of our own free spirits. There is in us a divine curiosity that urges us to perpetual inquiry. We are set in this world to solve riddles. We study because there burns within us an unquenched and unquenchable passion to uncover reality; to drive out the bogeys and the fetishes and the hoodoos that lurk in this human wilderness through which we are traveling. Study purifies and exalts the student. It loosens the bonds of Time and Space. Study enthrones a man with the gods. Through study we may escape into the infinite and the eternal; we may unite ourselves with God.

There is, moreover, a knight-errantry of intellect as well as a knight-errantry of arms. A veteran editor said some years ago, "The College youths I see are — too many of them — merely bright fellows, with precocious worldliness; they seem not to have seen the Holy Grail that a man who has lovingly studied any great subject gets glimpses of. I doubt whether present American college life gives enough of this inner growth." It is not yet too late in the world's history to experience "the luxury of doing some perpetual good in the world." The universe is still young — all alive with wonder and romance. It is true that brave men have at last touched the most remote point on this globe. The

North Pole has been discovered; the South Pole has been discovered; a light has been cast into the heart of the Dark Continent. But the scholar is still to have his day. A thousand highways invite him forth upon his adventures. Giants still lurk in the morasses of civilization. A million secrets that the world waits anxiously to know lie locked away in dark castles, which the bright sword of intellect alone can enter.

“To what purpose should our thought be directed to various kinds of knowledge,” writes the young Sir Philip Sidney, “unless room be afforded for putting it into practice so that public advantage may be the result?” What stronger incentive can we have to become students, scholars, and thinkers, than that suggested here by the great Sidney — that of enriching the Commonwealth, that of establishing America’s cultural supremacy among the nations? She must have pioneers of thought as well as pioneer discoverers of her boundless material resources. No nation ever bred greater soldiers, greater statesmen, greater captains of industry than has America. But can we truly say that she has held her own in the realm of scholarship and culture?

We hear continual complaints and warnings from our leading educators concerning the slackness of American boys in matters of study. American-born boys are continually being outclassed by foreign-born boys in our American schools. The Oxford dons, during a half year that I recently spent at Oxford, often expressed to me surprise and disappointment at the character of the scholastic work done by American Rhodes scholars; and I could not fail to see that the American men did not shine in scholarship or intellectual achievement. There were some able and earnest students among them; they distinguished them-

selves in athletics; and I was proud of their clean, strong, refined manhood. But they were not up to the mark in *scholarship*. How often has an American won the Nobel prize? Thrice recently it has come to America, but in two of the instances the victor was of foreign birth — Professor Michelson being a native of Germany and Dr. Carrel of France. I do not say that Americans are not inherently the equals of the men and women of any other nation. I believe that in mind and in body, and most of all in pure, sound morals, we are the superiors of any of the great peoples of the world. But I do say that, on the whole, we are not showing ourselves great students, great investigators, and great thinkers. Can an American student cherish any worthier ambition than that of conferring something intellectually great upon the Nation — and through the Nation upon mankind? Is it not worth while to strive to create an intellectual and spiritual America that shall outshine even the material America?

III

Study consists in focusing the mind upon the subject in hand. In very early life we have almost no power of voluntary attention; and even the mature scholar can hold his mind on a given object only for an instant by his own will power. The little child scarcely has any mind that he can call his own. He lives out of doors, on the open highways of sensation. His mind is snatched hither and thither by the bright baubles and the entrancing sounds around him. He surrenders himself completely and on the spot to the last and gaudiest attraction that bids for his attention. We laugh at professors and philosophers for being absent-minded.

In reality they are not absent-minded at all; they are so *present-minded* that they are utterly oblivious of their bodies and of everything around them. They have learned the art of study, and are giving attention mightily. With children — and with many college students — it is exactly the opposite. Their bodies are chained to the tasks before them, but their minds are absent on other and more attractive pursuits. Now the trouble with many Freshmen is that they are still children. They have never learned how to hold their attention closely and sternly to a set task. They are given to dawdling and to idle day-dreaming. They are at the mercy of every sensation and every enticement. An educated person learns “to do the thing he does not want to do, at the time he does not want to do it.”

“I know a person, for example,” writes William James, “who will poke the fire, set chairs straight, pick dust-specks from the floor, arrange his table, snatch up the newspaper, take down any book which catches his eye, trim his nails, waste the morning *anyhow*, and all without pre-meditation — simply because the only thing he *ought* to attend to is the preparation of a noon-day lesson in formal logic, which he detests. Anything but *that!*” What one of us does not see himself reflected in this description?

In the long run the secret of study resides in our ability to bathe our thought, our task, our lesson in the stream of interest. The way to study successfully and joyously is to be interested in the thing that claims our attention. It is not hard to interest a boy in a dog, or a gun, or a swimming-hole. Dress and travel and baseball and automobiles and dinner-parties interest everyone. But how remote these things all seem from the stupid rules and theorems and outlines and repellent facts that we find staring at us from

our text-books, and forever tripping us up in the class-room! Yet, in reality, these two realms are not altogether removed from each other. There are connecting threads, if only we can find them. We must learn to carry over from the things that we do like, or the things that we are absorbed in, fragments or filaments of interest which may be attached to the dull or hated study that we must master. Of course the surest and most natural way to bring this about is to live such an alert, wide-awake, and sympathetic life that the world speaks our language at whatever point we accost it. It is well to have sensations and experiences and some slight information, at least, stored up from many sources. The greater our store of facts, images, experiences, and associations from the past, the more likely we are to find some point of contact between a new subject and an old one, and so to transfer interest from one to the other. If a subject seems hopelessly dry, one may approach it in some such way as this: It has interested other men; why should I be a stranger to it? Or, let one say to one's self: This subject, whatever its attractiveness or lack of attractiveness, is the sort of thing that comes to life out there in the world — the sort of thing that men are stumbling over on every human highway. What I study now is related to what I am going to do hereafter. Somewhere, sometime, in a moment of doubt, or need, or loneliness, or crisis, this little, hard, unattractive, apparently insignificant scrap of fact, bit of quotation, or statement of principle may saunter obligingly into my mind at need, and prove as welcome to me as would a comrade or a brother. One may study with the thought of future travel. "He that would bring home the wealth of the Indies must carry out the wealth of the Indies." That is, we shall see only what we are prepared to see. Study with

the thought of making yourself an interesting and resourceful conversationalist. Study, again, for the rewards of scholarship; or if this is no incentive, study in order to win honor for your "bunch," your fraternity, your family, your country. And study, finally, if no other interest serves, *because you are a man*. Says William James, "Pride and pugnacity have often been considered unworthy passions to appeal to in the young. But in their more refined and noble forms they play a great part in the school-room and in education generally, being in some characters most potent spurs to effort. Pugnacity need not be thought of merely in the form of physical combativeness. It can be taken in the sense of general unwillingness to be beaten by any kind of difficulty. It is what makes us feel 'stumped' and challenged by arduous achievements, and is essential to a spirited and enterprising character. We have of late been hearing much of the philosophy of tenderness in education; 'interest' must be assiduously awakened in everything, difficulties must be smoothed away. *Soft* pedagogics have taken the place of the old steep and rocky path to learning. But from this lukewarm air the bracing oxygen of effort is left out. It is nonsense to suppose that every step in education *can* be interesting. The fighting impulse must often be appealed to. Make the pupil feel ashamed of being scared at fractions, of being downed by the law of falling bodies; rouse his pugnacity and pride, and he will rush at the difficult places with a sort of inner wrath at himself that is one of his best moral faculties. A victory scored under such conditions becomes a turning-point and crisis of his character. It represents the high-water mark of his powers, and serves thereafter as an ideal pattern for his self-imitation. The teacher who never rouses this sort of pugnacious

excitement in his pupils falls short of one of his best forms of usefulness.”¹

IV

Bodily conditions largely affect mental activity. There is no team-work so essential as the team-work between brain and thought. The soil in which thought is nourished is the fine grey nerve-matter of the brain. The intellectual harvest from this brain-soil will depend upon two things — the original and inherited vigor of the nerve-cells of the brain, and the quantity and quality of the blood with which they are supplied. The delicate grey nerve-matter of the brain requires much good blood. Indeed, the brain is not unlike a great sponge, and the harder one studies the more plentifully it must be saturated with pure, rich blood. Like any other physical organ, the brain becomes exhausted after long-continued mental effort, and must have rest in order to regain its vitality. Prolonged hard thinking tears down and wears away the brain tissue. This waste matter, like a charred lamp-wick that retards the free supply of oil to the flame, must be carried off and replaced by fresh material. Sleep and exercise are the best means of working this change in the tired brain. And, always, much fresh air is required for this renewal. The mind is freshest and best fitted for hard work in the morning; so the severest tasks should be taken up as early in the day as possible. It is not a good thing, though, to study long and hard in the early morning before eating. On the other hand, it is poor policy to study late into the night; first, because the blood supply in the brain is then so charged with the products of decomposition,

¹ *Talk to Teachers on Psychology, etc.*, pp. 54-55. Henry Holt and Co., New York.

due to the wear and tear of the body during the activities of the day, that the mind cannot get clear and firm impressions; and, second, because the undue amount of blood that has been called to the brain tends to drive sleep away even after one quits work. Each student should study his own case carefully and find out when and how he can do the best work.

Nor is it a good thing to study soon after a hearty meal; for, since the digestive organs are heavily taxed at this time, they summon a large supply of blood from the brain and the other parts of the body. And, since there cannot be a proper supply of blood in both places at the same time, either the digestive organs will be robbed of their supply, with the result that digestion cannot be carried on properly, or the brain will be so impoverished that it must of necessity do poor work. For this reason, too, meal-time should be an occasion for leisurely conversation and good-fellowship; and for the same reason the time for at least a half-hour after a heavy meal should be spent either in the enjoyment of a short nap; or with music or light reading; or in some form of agreeable and easy physical exercise. The serious student will think out carefully a daily program of study and then adhere to it as closely as he can without doing violence to common sense.

Use your eyes with care. Do not strain them in the twilight, or use them when the artificial light is bad. Do not sit with your face to the light; beware of a light too powerful or dazzling. Sit so that the rays of light will fall over your shoulder upon the page before you. You will find it beneficial, when you are compelled to glue your eyes steadily to your task for a long period, to go to the window once in a while and relieve the eyes by focusing them for a brief time upon some distant object in the landscape.

Study is made easier by providing for bodily comfort during the time that one is closely engaged in thought, since nothing should take away from the vividness of the impression received by the nerve-cells. One should be seated comfortably; should not be too cold or too hot; should not be pelted and battered and shot through with noises from the street. A wise student knows when he has studied on a given occasion to the limit of efficiency, and then gives over. But it is a mistake to suppose that one cannot work unless one is in the mood for it. A normal mind in a healthy body will work at need; and the best way to get the desired mood is to go to work.

V

We should go about the preparation of a lesson in some such way as a general would set about the capture of a city; or as an engineer would endeavor to solve the problem of supplying a city with pure water; or as a detective would undertake the task of ferreting out a crime; or as you, yourself, would try to start a rabbit from a brush-heap. There is something at the heart of the lesson, and you must get at this the first thing. Ask yourself, What is the main idea — the interpreting thought — of this assignment? What is the key to this problem? What is the theme of this essay, the point at issue in this speech, the dominant or unifying emotion in this poem or drama? When once the student has seized this deeper inner meaning and has dragged it into the light, the minor points, the less important ideas, the illustrations, the examples — all these will fall into their proper places and will be easily understood and fully enjoyed.

But the ideas involved in a lesson are not to be introduced into one's anatomy merely as dead lumps of truth. They

are to be reacted upon. Independent processes of thought must be set in motion. A boy ought to be excited by a new idea just as he would be excited by fresh tracks when out hunting. The material presented for consideration must be passed upon. It is to be arraigned before the high court of one's own thought. Let us not be too modest to think. Doubtless the text-books are about right; and it is to be presumed that the professor knows vastly more than does the pupil; and no doubt wise heads have weighed the matter. But notwithstanding all this, the student now sits supreme. It is his court; he is trying the case for himself and not for another.

The student must next organize the whole matter that has been brought before him in accordance with his own purpose and his own needs, so that he may carry away with him his own compact and usable kit of new and important information. There is a residuum of fact, or truth, or inspiration that results from the study of a given subject. This outcome of one's thinking, whether large or small, becomes a lasting personal acquisition. It is not merely the asset of an hour, but is a possession for all time. The student has it not by rote or merely on authority, but upon individual approval and acceptance.

Finally, knowledge results in permanent enrichment only when it has been put into play; that is, it must be related to life and must flow out in action. This explains why instructors frown upon "cramming." "Crammed" information is for immediate use; and it passes away along with the crisis that led to its acquisition. It is, then, not to be thought for a moment that the final end or outcome of a college assignment is the presentation of it to the instructor in recitation or examination. That is to miss the point

entirely. Knowledge that is worth while will become so much a part of the student that he will forget when and where he got it. Not only shall he have it; it will have him. That is, in so far as it is a workable thing, it will become habit. For example, you do not count yourself an expert with your gun, your camera, your automobile — nor do you get much enjoyment from them — until their manipulation has become second nature to you. In the same way, no lesson can ever be said to have been mastered until it has entered into and become a part of one.

The sheer, brute work of memorizing does not amount to so much as is commonly supposed. When important subject-matter has been dealt with in some such way as has been suggested in the preceding paragraphs, one's nervous system will remember of its own accord. The things that have interested us supremely — that we have considered worth while and have made a part of ourselves — we cannot forget. They have enmeshed themselves in our central being, and will always be promptly available. There are certain things such as spelling, the multiplication table, the facts of geography, and the Ten Commandments which had to be laid up in memory by an outright effort of the will by frequent repetition. There always will be a good deal of this pure memory work to be done; but, aside from stated demands of this kind, it will be of little avail simply to memorize mechanically. Besides, the quality of any individual memory is a fixed thing. One's memory is either good, bad, or indifferent by nature. Each person is endowed with brain-stuff of a certain degree of power to take and hold impressions, and there will be no change of quality. Some minds are "wax to receive and marble to retain," and some are quite the opposite. This is not to say that the memory of

a given person may not be stronger and more retentive at one time than at another. Whatever strengthens or weakens the general state of bodily health — in particular the general condition of the nervous system — will no doubt affect the memory as well. But it seems certain that at bottom the memory does not yield to cultivation.

Fortunately for most of us, however, that is not necessarily the best type of mind that has the most tenacious memory. It is a good sort of mind to have, but there are other qualities that may offset the lack of it. Some of the finest and most productive minds have been endowed with rather poor memory-stuff. The thing for a student to do is to find out and to practise the most approved methods of memorizing. That is all one can do; yet that may count for a good deal. Again, and finally, the best way to remember is to be so interested in a thing that one cannot forget it, and to connect it and inter-connect it with a thousand other interesting and familiar things.

VI

The student owes it to himself to preserve his intellectual independence and integrity. No one can think for him. He should let no one coerce his will, or secure his consent to what he does not believe. It is not the instructor but the student who is to have first consideration. The student is the supreme end for which the college exists. The gentleman will, of course, honor his instructors and will be considerate of them in every way. But the faculty is not the center of gravity of a college. A student has the right, as an honest and earnest seeker after truth, to weigh himself over against the whole college establishment, considered

as an organization fitted to supply the need which led him to enter college. The worthy student puts his all into this college adventure — his money, four years of more than golden time, his chance for fruitful life friendships, his plastic capabilities. So he must know his rights and must expect and demand much.

RECENT 'TENDENCIES IN COLLEGE EDUCATION ¹

BY PRESIDENT DAVID STARR JORDAN

Leland Stanford Junior University

IT has long been recognized that a four years' college course, after the course in the secondary school, and preceding the course in professional training, holds the young man a very long time in school. Few men are prepared for college, as matters stand, before the age of seventeen or eighteen. Few graduate under twenty-one or twenty-two, and the professional school demands the years to twenty-four, twenty-five, or twenty-six. After this follows another year or two of petty beginnings, and by the time the young man is fairly under way, he has reached the age of thirty. If from ill health, hesitation of policy, or for any other reason, the college course is delayed, the entrance on professional life becomes correspondingly later. By this process, the ancient rule of, "Rise early, before you are twenty-five, if possible," is persistently violated.

There is no advantage in merely putting in time in college at the expense of serious work outside. Every day in school should justify itself. Wherever time can be saved without sacrifice of results, it is a real gain in education.

The college course has been systematically lengthened

¹ Reprinted from *The Voice of the Scholar*, by permission of Paul Elder and Co., San Francisco.

within the past twenty years. It has been made longer that it may be enriched and made effective. To this end, subject after subject of an elementary character has been thrown backward to the preparatory schools. In this, there are some advantages. The college with more advanced students becomes more serious and more enlightened. It offers a broader range of subjects, and touches the interests of a much larger number of men.

On the other hand, pupils are often kept in their local high schools until they are tired of the place and tired of the work. Higher education begins when a boy leaves home and learns to depend on himself. Because the high schools have an inadequate and over-feminine teaching force, very many boys who might have been helped by a college education abandon school long before they are ready to enter college. There is a constant pressure on the preparatory school to undertake more work and to do it more rapidly. The preparatory school tries to do this, with some success and also with serious drawbacks, because the results are tested by the quantity rather than the quality of work done.

The college has not yet devised a qualitative scale of admission. Not how much the student knows, but what is the nature of his ability and training, should be the test of preparation. The college ought to insist that the student shall be able to go on with the higher work successfully, rather than that he should have to his credit such and such subjects, or their equivalents. But it is easier to make numerical estimates than to test the student's mettle. It is easier to measure cordwood than culture, and our tests of preparation are based on the method used in estimating cordwood.

The college should receive men whenever they are ready for its freedom and ready to do its work. If it can devise a sure method, it may "dip down" into the lower schools and take their best students when they have reached fitness for independent study.

Having turned the freshman year of former days over to the preparatory schools, the college can now do correspondingly more in its senior year. Shall it use this time for general culture, or for professional training? Here the pressure to yield this year to the professional schools makes itself felt. In America, the professional schools have vainly tried to train men who have no foundation of knowledge or discipline; to make lawyers and physicians out of men with neither scientific knowledge nor literary culture. This has failed, and in its failure has brought all American professions, except engineering, into disrepute.

The reputable professional school demands, or will soon demand, a college education as a prerequisite for entrance. No man with less training than this can do specialized work in university fashion. The college course represents a degree of enlightenment and a kind of training without which professional success and usefulness are not possible. The extension of the elective system has enabled the college to meet the needs of all kinds of men of brains and force. To shorten the college course to three years is to yield the last year to the professional schools, and these sorely need the time.

Another influence tending in this direction comes from the German educational system. In Germany, the local high school, or *gymnasium*, takes, let us say, two of the years we give to the college. The professional school or university takes the rest. The university gives no general culture or

general training. The *gymnasium* gives nothing else, and its curriculum is as rigid as that of the university is free.

While German educators are considering the possible introduction of the college as an intermediate between the *gymnasium* and the university, there is in America a tendency toward the obliteration of the college, by merging its higher years into the university, its lower into the preparatory school.

It is true that in the *gymnasium* students get on faster than in our high schools and preparatory schools. The German student is as far along in his studies at sixteen as the American at eighteen. This is due to the fact that American life makes more outside demands on boys than life in Germany does. The American boy is farther along in self-reliance and in knowledge of the world at sixteen than the German at twenty. The American college freshman, especially if brought up in the West, knows a thousand things, outside of his books and more useful, because more true than most of what his books contain. He can ride, drive, swim, row, hunt, take care of horses, play games, run an engine, or attend to some form of business, while the German boy cannot even black his own shoes. As education is no perquisite of the rich, the American boy has very likely been obliged to earn the money he spends on his own education. To do this he loses time in scholastic marks, but in the long run this is clear gain, provided that he does not abandon his education. The boy who graduates at twenty-four is often more than three years ahead of the one who takes his bachelor's degree at twenty-one. To lose time in testing life is not a loss at all, and the American boy is the stronger for his early escape from leading strings. When his university training is over, he is not merely learned, he is adequate,

and the higher ideal of personal effectiveness supplements the German ideal of erudition, or the English ideal of personal culture.

It is proposed now to let a man graduate in three years, provided he can do four years' average work in that time. This is no new proposition and needs no discussion. Many men can do in three years more than the average man can in four. In many institutions, in most of those in the West, this privilege has been allowed for many years. If guarded from abuse, and if the possibility of mere cramming is excluded, there can be no objection to it. In many institutions a man graduates whenever he has done the required work, and the propriety of this needs no argument.

But the average man cannot do the required work in less than four years. What shall we do for him? It is practicable to reduce the amount of work required for graduation. This would still leave the college course longer than it was twenty years ago, because so much more is now required for admission to college.

I do not believe that this is the best solution. It is better, I believe, to bring the elements of professional knowledge and the beginning of advanced research into the course itself. It is better to break down the barrier between the college and the university, by letting the university dip down into the college. For example, in making lawyers, the work in the foundations of law can be relegated to the college, as in making chemists we now teach elementary chemistry in the Freshman year. In training physicians, the elementary work, physiology, general anatomy, histology, and chemistry, should all be in the college course, and in making scientific men of any grade, the senior year is none too early for the beginnings of scientific research. I believe

that the four years' college course offers a great advantage. It is now possible to offer the serious student, before graduating, the crowning value of the college course — something of the method of research. It is likewise possible to offer the elements of professional training inside the college course, and not as an affair wholly separate. In favor of this arrangement, the following facts may be urged:

It is an advantage to college training to relate it to life. The sooner a man knows what he is to do in life, and gets at it, the better. This being admitted, the fuller the preparation the better, provided the final goal is always kept in view. To make a first-rate surgeon, the scalpel should be in use from youth onward. It need not be used on the human body, but the methods of histology and anatomy should be learned early and never allowed to fall into disuse. To put an embryo physician through four years of classics and mathematics, and then to turn him suddenly into dissection and clinic, is to invite failure. He has learned nothing of research in his college course, his hand has grown clumsy and his power of observation is dulled. To be a good physician, he should have turned his whole college course in that direction — not that he should have had less of literature and the humanities, but that these should aid science, not displace it.

A young man makes a better lawyer if he is in some degree a law student throughout his college course, for six or seven years, not merely for three at the end. Elementary equity is in no sense an advanced study. It has a natural place in the college curriculum, with just as much right as economics, or the history of philosophy, and to the ordinary college course the universities should regulate elementary law, physiology, histology, comparative anatomy, and all forms of science

which are elementary and fundamental to professional research. When this is done, four years will be none too long for general training, and the professional departments will deal with men prepared to do serious work, men worthy of the advantages the best libraries and laboratories can have to offer. Then, if the time is to be shortened, the result can be reached by the higher demands of the professional schools. It is absurd to call the department of law a "graduate school" when half its students are engaged with the *a-b-c* of equity, a subject as elementary as trigonometry or qualitative analysis. Let elementary law go with elementary chemistry and the advanced school can devote itself to advanced training, and a man who is to be a lawyer can think in terms of law throughout his college course. He will be a better lawyer for doing so, and his work being better related to life, he will be in every other respect a better scholar on account of it.

Leaving out ill-equipped or temporary schools, the American professional school of the future will have one or the other of two great purposes. The one is typified, perhaps, by the professional schools of Michigan. The professional school will take the profession as it is and raise it as a whole. So many men will be doctors, so many men will be lawyers in Michigan. Let us take them as we find them and make them just as good lawyers and doctors as we can. Let us not drive them away by requirements they cannot or will not meet, but adjust the work and conditions to the best they can meet, the best standards winning in the long run and carrying public opinion with them.

The other ideal is perhaps typified by Johns Hopkins University. Let the university medical school deal with the exceptional man of exceptional ability and exceptional

training. Give him special advantages, send out a limited number of the best physicians possible, and raise the standard of the profession by filling its ranks with the best the university can send.

The one ideal or the other will be, consciously or not, before each professional school which strives to be really helpful. It is not for me to say which is the better. The one purpose naturally presents itself to state institutions, or to institutions dependent on appropriations or patronage. The other is more readily achieved by institutions of independent endowment. It is a matter of economy that all schools should not be alike in this regard.

The high school course gives a certain breadth of culture. The high school of today is as good as the college of forty years ago, so far as studies go. It misses the fact of going away from home and of close relation with men of higher wisdom and riper experience than our high schools demand in their teachers. It takes a broader mental horizon to be a physician than merely to practice medicine, to be a lawyer than merely to practice law. Those who want the least education possible can get along with very little; they can omit the college. But for large-minded, widely competent men, men fit for great duties, not a moment of the college course can be spared. Whether to take a college education or not, depends on the man — what there is in him — and on the course of study. There is no magic in the name of college, and there is no gain in wrong subjects, work shirked, or in right subjects taken under wrong teachers. Studies, like other food, must be assimilated before they can help the system.

The great indictment of the college is its waste of the student's time; prescribed studies taken unwillingly; irrel-

evant studies taken to fill up; helpful studies taken under poor teachers; any kind of studies taken idly — all these have tended to discredit the college course. Four years is all too short for a liberal education, if every moment be utilized. Two years is all too long, if they are spent in idleness and dissipation, or if tainted by the spirit of indifference.

The spirit of the college is more important than the time it takes. The college atmosphere should be a clean and wholesome one, full of impulses to action. It is good to breathe this air, and in doing so, it matters little whether one's studies be wholly professional, half professional, or directed towards ends of culture alone.

In city colleges where the students live at home, traveling back and forth on street cars, a college atmosphere cannot be developed. In these institutions, as a rule, the college work is perfunctory, its recitations being often regarded as a disagreeable interruption of social and athletic affairs. As a rule, higher education begins when a man leaves home to become part of a guild of scholars. The city college is merely a continued high school, and with both students and teachers there is a willingness to cut it as short as possible, so that the young men can "get down to business." In institutions of this type, the professional school forms a sharp contrast to the college in its stronger requirements and more serious purpose. In other types of college, it is the general student who does the best work. In many of them the professional departments are far inferior in tone and spirit to the general academic course.

It becomes, then, a question as to the college itself, how long a student should stay in. If the academic requirements are severe, just, and honest; if the idler, the butter-

fly, the blockhead, and the parasite are promptly dropped from the rolls; if the spirit of plain living and high thinking rules in the college, the student should stay there as long as he can, and, if possible, take part of his professional work under its guidance. The nearer the teacher, the better the work. The value of teachers grows less as the square of their distance increases. If the college course is a secondary matter, with inferior teachers talking down to their students, studies prescribed because the faculty cares too little for the individual man to adapt its courses to his needs — an atmosphere of trifling or no atmosphere at all — the sooner the student gets into something real, the better. A good university may develop in a great city, a good college cannot, because students and teachers are all too far apart.

In this matter the college degree is only an incident. It is the badge of admission to the roll of alumni, a certificate of good fellowship, which always means a little and may imply a great deal. But the degree is only one of the toys of our educational babyhood, as hoods and gowns represent educational bib and tucker. Don't go out of your way to take a degree. Don't miss it because you are in too great a hurry. For the highest professional success, you can afford to take your time. It takes a larger provision for a cruise to the Cape of Good Hope than for a run to the Isle of Dogs.

The primitive American college was built strictly on English models. Its purpose was to breed clergymen and gentlemen, and to fix on these its badge of personal culture, raising them above the common mass of men. Till within the last thirty years the traditions of the English Tripos held undisputed sway. We need not go into details of the long years in which Latin, Greek, and mathematics, with a dash of outworn philosophy, constituted higher education

in America. The value of the classical course lay largely in its continuity. Whoever learned Greek, the perfect language and the noble literature, gained something with which he would never willingly part. Even the weariness of Latin grammar and the intricacies of half-understood calculus have their value in the comradeship of common suffering and common hope. The weakness of the classical course lay in its lack of relation to life. It had more charms for pedants than for men, and the men of science and the men of action turned away hungry from it.

The growth of the American university came on by degrees, by different steps, some broadening, some weakening, by which the tyranny of the Tripos was broken, and the democracy of studies established with the democracy of men.

It was something over thirty years ago when Herbert Spencer asked this great question, "What knowledge is of most worth?" To the schoolmen of England this came as a great shock, as it had never occurred to most of them that any knowledge had any value at all. Its function was to produce culture, which, in turn, gave social position. That there were positive values and relative values was new in their philosophy. Spencer went on to show that those subjects had most value which most strengthened and enriched life; first, those needful to the person, then those of value in professional training, then in the rearing of the family, the duty as a citizen, and finally those fitting for esthetic enjoyment. For all these, except the last, the English universities made no preparation, and for all these purposes Spencer found the highest values in science, the accumulated, tested, arranged results of human experience. Spencer's essay assumed that there was some one best

course of study — the best for every man. This is one of the greatest fallacies in education. Moreover, he took little account of the teacher, perhaps assuming with some other English writers that all teachers were equally inefficient and that the difference between one and another may be regarded as negligible.

It has been left for American experimenters in education to insist on the democracy of the intellect. The best subjects for any man to study are those best fitted for his own individual development, those which will help make the actual most of him and his life. Democracy of intellect does not mean equality of brains, still less indifference in regard to their quality. It means simply fair play in the schedule of studies. It means the development of fit courses of study, not traditional ones, of a "tailor-made" curriculum for each man instead of the "hand-me-down" article, misfitting all alike.

In the time of James II, Richard Rumbold "never could believe that God had created a few men already booted and spurred, with millions already saddled and bridled for these few to ride." In like fashion, Andrew Dickson White could never believe that God had created a taste for the niceties of grammar or even the appreciation of noble literature, these few tastes to be met and trained while the vast body of other talents were to be left unaided and untouched, because of their traditional inferiority. In unison with President White, Ezra Cornell declared that he "would found an institution where any person could find instruction in any study." In like spirit the Morrill Act was framed, bringing together all rays of various *genius*, the engineer and the psychologist, the student of literature and the student of exact science, "Greek-minded" men and tillers

of the soil, each to do his own work in the spirit of equality before the law. Under the same roof each one gains by mutual association. The literary student gains in seriousness and power, the engineer in refinement and appreciation. Like in character is the argument for coeducation, a condition encouraged by this same Morrill Act. The men become more refined from association with noble women, the women more earnest from association with serious men. The men are more manly, the women more womanly in coeducation, a condition opposed alike to rowdyism and frivolity.

In the same line we must count the influence of Mark Tappan, perhaps the first to conceive of a state university, existing solely for the good of the state, to do the work the state most needs, regardless of what other institutions may do in other states. Agassiz in these same times insisted that advanced work is better than elementary, for its better disciplinary quality. He insisted that Harvard in his day was only "a respectable high school, where they taught the dregs of education." Thorough training in some one line he declared was the backbone of education. It was the base line by which the real student was enabled to measure scholarship in others.

In most of our colleges the attempt to widen the course of study by introducing desirable things preceded the discovery that general courses of study prearranged had no real value. We should learn that all prescribed work is bad work unless it is prescribed by the nature of the subject. The student in electrical engineering takes to mathematics, because he knows that his future success with electricity depends on his mastery of mechanics and the calculus. In the same fashion, the student in medicine is willing to accept chemistry and physiology as prescribed studies. But a

year in chemistry, or two years in higher mathematics, put in for the broadening of the mind or because the faculty decrees it, has no broadening effect.

Work arbitrarily prescribed is always poorly done; it sets low standards, and works demoralization instead of training. There cannot be a greater educational farce than the required year of science in certain literary courses. The student picks out the easiest science, the easiest teacher, and the easiest way to avoid work, and the whole requirement is a source of moral evil. Nothing could be farther from the scientific method than a course in science taken without the element of personal choice.

The traditional courses of study were first broken up by the addition of short courses in one thing or another, substituted for Latin or Greek, patchwork courses without point or continuity. These substitute courses were naturally regarded as inferior and for them very properly a new degree was devised, the degree of B.S. — Bachelor of Surfaces.

That work which is required in the nature of things is taken seriously. Serious work sets the pace, exalts the teacher, inspires the man. The individual man is important enough to justify his teachers in taking the time and the effort to plan a special course for him.

Through the movement towards the democracy of studies and constructive individualism, a new ideal is being reached in American universities, that of personal effectiveness. The ideal in England has always been that of personal culture; that of France, the achieving, through competitive examinations, of ready-made careers, the satisfaction of what Villari¹ calls *Impiegomania*, the craze for appointment; that

¹ "A consequence of cheap higher education in Italy is the vast and ever increasing army of the educated unemployed (called *spostati*). Every

of Germany, thoroughness of knowledge; that of America, the power to deal with men and conditions. Everywhere we find abundant evidence of the personal effectiveness of American scholars. Not abstract thought, not life-long investigation of minute data, not separation from men of lower fortune, but the power to bring about results is the characteristic of the American scholar of today.

From this point of view the progress of the American university is most satisfactory and most encouraging. The large tendencies are moving in the right direction. What shall we say of the smaller ones?

Not long ago, the subject of discussion in a thoughtful address was "The Peril of the Small College." The small college has been the guardian of higher education in the past. It is most helpful in the present and we cannot afford

year a large number of graduates in law, medicine, belles-lettres, and science are turned out into the world to enter professions in which there is no room for them. Their education has unfitted them for useful work, without enabling them to succeed in the liberal professions. Men who in England would go into business or emigrate to America or the colonies, in Italy become lawyers without clients, doctors without patients, journalists and *litterateurs* without readers, professors without pupils. Some succeed in getting a little work by under-selling abler men, thus lowering the already low professional incomes; others lead idle and vicious lives for a time, and drift into Socialism and Anarchism in Northern Italy, or into the Mafia and the Camorra in the South. But a large number try to obtain that panacea for all ills — government employment. *Impiegomania* is a recognized disease in Italy, and a young man who can obtain an appointment in a Government office, where he has little work and a salary of £50 or £60 a year, thinks himself at the height of earthly bliss. Government employment is the Holy Grail of three-quarters of the university graduates. The most miserably paid *impiegato* or the most unsuccessful professional man regards himself as superior to the most prosperous tradesman or skilled mechanic." — Villari, *Village Life in Town and Country*.

It is not the cheapness of higher education which is here at fault, but its misdirection and the wrong motives ruling in Italian society.

to let it die. We understand that the large college becomes the university. Because it is rich, it attempts advanced work and work in many lines. It takes its opportunity, and an opportunity which the small college cannot grasp. Advanced work costs money. A wide range of subjects, taught with men, libraries, and laboratories, is a costly matter, but by a variety of supply the demand is formed. The large college has many students, because it offers many opportunities. Because large opportunities bring influence and students and gifts, there is a tendency to exaggerate them. It is easy to feel that the facilities we offer are greater than is really the case. We are led to boast, because only boasting seems to catch the public eye.

The peril of the small college is the peril of all colleges, the temptation of advertising. All boasting is self-cheapening. The peril of the small college is that in its effort to become large it shall cease to be sound. The small college can do good elementary work in several lines. It can do good advanced work in a very few. If it keeps its perspective, if it does only what it can do well, and does not pretend that bad work is good work, or that the work beyond its reach is not worth doing, it is in no danger. The small college may become either a junior college or high-grade preparatory school, sending its men elsewhere for the flower of their college education, or else it must become a small university running narrowly on a few lines, but attending to these with devotion and persistence. Either of these is an honorable condition. For the first of these the small college has a great advantage. It can come close to its students; it can "know its men by name." The value of a teacher is enhanced as he becomes more accessible. The work of the freshman and sophomore years in many a great

college is sadly inadequate, because its means are not fitted to its ends. In very few of our large colleges does the elementary work receive the care its importance deserves.

The great college can draw the best teachers away from the small colleges. In this regard the great college has an immense advantage. It has the best teachers, the best trained, the best fitted for the work of training. But in most cases the freshman never discovers this. There is no worse teaching done under the sun than in the lower classes of some of our most famous colleges. Cheap tutors, inexperienced and underpaid, are set to lecture to classes far beyond their power to interest. We are saving our money for original research, careless of the fact that we fail to give the elementary training which makes research possible. Too often, indeed, research itself, the noblest of all university functions, is made an advertising fad. The demands of the university press have swollen the literature of science, but they have proved a doubtful aid to its quality. "Get something ready. Send it out. Show that we are doing something." All this never advanced science. It is through men born to research, trained to research, choicest product of nature and art, that science advances.

Another effect of the advertising spirit is the cheapening of salaries. The smaller the salaries, the more departments we can support. It is the spirit of advertising that leads some institutions to tolerate a type of athlete who comes as a student with none of the student's purpose. I am a firm believer in college athletics. I have done my part in them in college and out. I know that "the color of life is red," but the value of athletic games is lost when outside gladiators are hired to play them. No matter what the inducement, the athletic contest has no value except as the spontaneous

effort of the college man. To coddle the athlete is to render him a professional. If an institution makes one rule for the ordinary student and another for the athlete, it is party to a fraud. Without some such concession, half the great football teams of today could not exist. I would rather see football disappear and the athletic fields closed for ten years for fumigation than to see our colleges helpless in the hands of athletic professionalism, as many of them are today.

This is a minor matter in one sense, but it is pregnant with large dangers. Whatever the scholar does should be clean. What has the support of boards of scholars should be noble, helpful, and inspiring. For the evils of college athletics, the apathy of college faculties is solely responsible. The blame falls on us; let us rise to our duty.

There is something wrong in our educational practice when a wealthy idler is allowed to take the name of student, on the sole condition that he and his grooms shall pass occasional examinations. There is no justification for the granting of degrees on cheap terms, to be used in social decoration. It is said that the chief of the great coaching trust in one of our universities earns a salary larger than was ever paid to any honest teacher. His function is to take the man who has spent the term in idleness or dissipation, and by a few hours' ingenious coaching to enable him to write a paper as good as that of a real student. The examinations thus passed are mere shams, and by the tolerance of the system the teaching force becomes responsible for it. No educational reform of the day is more important than the revival of honesty in regard to credits and examinations, such a revival of honest methods as shall make coaching trusts impossible.

The same methods which cure the aristocratic ills of idleness and cynicism are equally effective in the democratic vice of rowdyism. With high standards of work, set not at long intervals by formal examinations, but by the daily vigilance and devotion of real teachers, all these classes of mock students disappear.

The football tramp vanishes before the work-test. The wealthy boy takes his proper place when honest, democratic brain effort is required of him. If he is not a student, he will no longer pretend to be one and ought not to be in college. The rowdy, the mucker, the hair-cutting, gate-lifting, cane-rushing imbecile is never a real student. He is a gamin masquerading in cap and gown. The requirement of scholarship brings him to terms. If we insist that our colleges shall not pretend to educate those who cannot or will not be educated, we shall have no trouble with the moral training of the students.

Above all, in the West, where education is free, we should insist that free tuition means serious work, that education means opportunity, that the student should do his part, and that the degree of the university should not be the seal of academic approbation of four years of idleness, rowdyism, profligacy, or dissipation.

Higher education, properly speaking, begins when a young man goes away from home to school. The best part of higher education is the development of the instincts of the gentleman and the horizon of the scholar. To this end self-directed industry is one of the most effective agents. As the force of example is potent in education, a college should tolerate idleness and vice neither among its students nor among its teachers.

THE NEW DEFINITION OF THE CULTIVATED MAN¹

By CHARLES WILLIAM ELIOT

To produce the cultivated man, or at least the man capable of becoming cultivated in after-life, has long been supposed to be one of the fundamental objects of systematic and thorough education. The ideal of general cultivation has been one of the standards in education. It is often asked: Will the education which a given institution is supplying produce the cultivated man? Or, Can cultivation be the result of a given course of study? In such questions there is an implication that the education which does not produce the cultivated man is a failure, or has been misconceived, or misdirected. Now, if cultivation were an unchanging ideal, the steady use of the conception as a permanent test of educational processes might be justified; but if the cultivated man of today is, or ought to be, a distinctly different creature from the cultivated man of a century ago, the ideal of cultivation cannot be appealed to as a standard without preliminary explanations and interpretations. It is the object of this paper to show that the idea of cultivation in the highly trained human being has undergone substantial changes during the last century.

I ought to say at once that I propose to use the term

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“cultivated man” in only its good sense — in Emerson’s sense. In this paper, he is not to be a weak, critical, fastidious creature, vain of a little exclusive information or of an uncommon knack in Latin verse or mathematical logic: he is to be a man of quick perceptions, broad sympathies, and wide affinities; responsive but independent; self-reliant but deferential; loving truth and candor, but also moderation and proportion; courageous but gentle; not finished, but perfecting. All authorities agree that true culture is not exclusive, sectarian, or partisan, but the very opposite; that it is not to be attained in solitude, but in society; and that the best atmosphere for culture is that of a school, university, academy, or church, where many pursue together the ideals of truth, righteousness, and love.

Here some one may think: This process of cultivation is evidently a long, slow, artificial process; I prefer the genius, the man of native power or skill, the man whose judgment is sound and influence strong, though he cannot read or write — the born inventor, orator, or poet. So do we all. Men have always revered prodigious inborn gifts, and always will. Indeed, barbarous men always say of the possessors of such gifts: These are not men; they are gods. But we teachers who carry on a system of popular education, which is by far the most complex and valuable invention of the nineteenth century, know that we have to do, not with the highly gifted units, but with the millions who are more or less capable of being cultivated by the long, patient, artificial training called education. For us and our system the genius is no standard, but the cultivated man is. To his stature we and many of our pupils may in time attain.

There are two principal differences between the present ideal of cultivation and that which prevailed at the begin-

ning of the nineteenth century. All thinkers agree that the horizon of the human intellect has widened wonderfully during the past hundred years, and that the scientific method of inquiry, which was known to but very few when the nineteenth century began, has been the means of that widening. This method has become indispensable in all fields of inquiry, including psychology, philanthropy, and religion; and therefore intimate acquaintance with it has become an indispensable element in culture. As Matthew Arnold pointed out more than a generation ago, educated mankind is governed by two passions—one the passion for pure knowledge, the other the passion for being of service or doing good. Now, the passion for pure knowledge is to be gratified only through the scientific method of inquiry. In Arnold's phrases, the first step for every aspirant to culture is to endeavor to see things as they are, or "to learn, in short, the will of God." The second step is to make that will prevail, each in his own sphere of action and influence. This recognition of science as pure knowledge, and of the scientific method as the universal method of inquiry, is the great addition made by the nineteenth century to the idea of culture. I need not say that within that century what we call science, pure and applied, has transformed the world as the scene of the human drama; and that it is this transformation which has compelled the recognition of natural science as a fundamental necessity in liberal education. The most convincing exponents and advocates of humanism now recognize that science is the "paramount force of the modern as distinguished from the antique and the mediæval spirit" [John Addington Symonds, *Culture*], and that "an interpretation of humanism with science, and of science with humanism, is the condition of the highest culture."

A second modification of the earlier idea of cultivation was advocated by Ralph Waldo Emerson more than two generations ago. He taught that the acquisition of some form of manual skill and the practice of some form of manual labor were essential elements of culture. This idea has more and more become accepted in the systematic education of youth; and if we include athletic sports among the desirable forms of manual skill and labor, we may say that during the last thirty years this element of excellence of body in the ideal of education has had a rapid, even an exaggerated, development. The idea of some sort of bodily excellence was, to be sure, not absent in the old conception of the cultivated man. The gentleman could ride well, dance gracefully, and fence with skill. But the modern conception of bodily skill as an element in cultivation is more comprehensive, and includes that habitual contact with the external world which Emerson deemed essential to real culture. We have lately become convinced that accurate work with carpenter's tools, or lathe, or hammer and anvil, or violin, or piano, or pencil, or crayon, or camel's-hair brush, trains well the same nerves and ganglia with which we do what is ordinarily called thinking. We have also become convinced that some intimate, sympathetic acquaintance with the natural objects of the earth and sky adds greatly to the happiness of life, and that this acquaintance should be begun in childhood and be developed all through adolescence and maturity. A brook, a hedgerow, or a garden is an inexhaustible teacher of wonder, reverence, and love. The scientists insist today on nature study for children; but we teachers ought long ago to have learned from the poets the value of this element in education. They are the best advocates of nature study. If any here are not convinced

of its worth, let them go to Theocritus, Virgil, Wordsworth, Tennyson, or Lowell for the needed demonstration. Let them observe, too, that a great need of modern industrial society is intellectual pleasures, or pleasures which, like music, combine delightful sensations with the gratifications of observation, association, memory, and sympathy. The idea of culture has always included a quick and wide sympathy with men; it should hereafter include sympathy with nature, and particularly with its living forms — a sympathy based on some accurate observation of nature. The book-worm, the monk, the isolated student, has never been the type of the cultivated man. Society has seemed the natural setting for the cultivated person, man or woman; but the present conception of real culture contains not only a large development of this social element, but also an extension of interest and reverence to the animated creation and to those immense forces that set the earthly stage for man and all related beings.

Let us now proceed to examine some of the changes in the idea of culture, or in the available means of culture, which the last hundred years have brought about.

I. The moral sense of the modern world makes character a more important element than it used to be in the ideal of a cultivated man. Now character is formed, as Goethe said, in the "stream of the world" — not in stillness or isolation, but in the quick-flowing tides of the busy world, the world of nature and the world of mankind. At the end of the nineteenth century the world was wonderfully different from the world at the beginning of that eventful period; and, moreover, men's means of making acquaintance with the world were vastly ampler than they were a hundred years earlier. To the old idea of culture some

knowledge of history was indispensable. Now, history is a representation of the stream of the world, or of some little portion of that stream, one hundred, five hundred, two thousand years ago. Acquaintance with some part of the present stream ought to be more formative of character, and more instructive as regards external nature and the nature of man, than any partial survey of the stream that was flowing centuries ago. We have, then, through the present means of reporting the stream of the world from day to day, material for culture such as no preceding generation of men has possessed. The cultivated man or woman must use the means which steam and electricity have provided for reporting the play of physical forces and of human volitions which make the world of today; for the world of today supplies in its immense variety a picture of all stages of human progress, from the stone age, through savagery, barbarism, and mediævalism, to what we now call civilization. The rising generation should think hard, and feel keenly, just where the men and women who constitute the actual human world are thinking and feeling most today. The panorama of today's events is not an accurate or complete picture, for history will supply posterity with much evidence which is hidden from the eyes of contemporaries; but it is nevertheless an invaluable and a new means of developing good judgment, good feeling, and the passion for social service, or, in other words, of securing cultivation. But some one will say: The stream of the world is foul. True in part. The stream is, what it has been, a mixture of foulness and purity, of meanness and majesty; but it has nourished individual virtue and race civilization. Literature and history are a similar mixture, and yet are the traditional means of culture. Are not the Greek tragedies means

of culture? Yet they are full of incest, murder, and human sacrifices to lustful and revengeful gods.

II. A cultivated man should express himself by tongue or pen with some accuracy and elegance; therefore linguistic training has had great importance in the idea of cultivation. The conditions of the educational world have, however, changed so profoundly since the revival of learning in Italy that our inherited ideas concerning training in language and literature have required large modifications. In the year 1400, it might have been said with truth that there was but one language of scholars, the Latin, and but two great literatures, the Hebrew and the Greek. Since that time, however, other great literatures have arisen, the Italian, Spanish, French, German, and above all, the English, which has become incomparably the most extensive and various and the noblest of literatures. Under these circumstances it is impossible to maintain that a knowledge of any particular literature is indispensable to culture. Yet we cannot but feel that the cultivated man ought to possess a considerable acquaintance with the literature of some great language, and the power to use the native language in a pure and interesting way. Thus, we are not sure that Robert Burns could be properly described as a cultivated man, moving poet though he was. We do not think of Abraham Lincoln as a cultivated man, master of English speech and writing though he was. These men do not correspond to the type represented by the word "cultivated," but belong in the class of geniuses. When we ask ourselves why a knowledge of literature seems indispensable to the ordinary idea of cultivation, we find no answer except this — that in literature are portrayed all human passions, desires, and aspirations, and that acquaintance with these human feelings, and with

the means of portraying them, seems to us essential to culture. These human qualities and powers are also the commonest ground of interesting human intercourse, and therefore literary knowledge exalts the quality and enhances the enjoyment of human intercourse. It is in conversation that cultivation tells as much as anywhere, and this rapid exchange of thoughts is by far the commonest manifestation of its power. Combine the knowledge of literature with knowledge of the "stream of the world" and you have united two large sources of the influence of the cultivated person. The linguistic and literary element in cultivation therefore abides, but has become vastly broader than formerly — so broad, indeed, that selection among its various fields is forced upon every educated youth.

III. The next great element in cultivation to which I ask your attention is acquaintance with some part of the store of knowledge which humanity in its progress from barbarism has acquired and laid up. This is the prodigious store of recorded, rationalized, and systematized discoveries, experiences, and ideas. This is the store which we teachers try to pass on to the rising generation. The capacity to assimilate this store and improve it in each successive generation is the distinction of the human race over other animals. It is too vast for any man to master, though he had a hundred lives instead of one; and its growth in the nineteenth century was greater than in all the thirty preceding centuries put together. In the eighteenth century a diligent student with strong memory and quick powers of apprehension need not have despaired of mastering a large fraction of this store of knowledge. Long before the end of the nineteenth century such a task had become impossible. Culture, therefore, can no longer imply a knowledge of everything — not

even a little knowledge of everything. It must be content with general knowledge of some things, and a real mastery of some small portion of the human store. Here is a profound modification of the idea of cultivation which the nineteenth century has brought about. What portion or portions of the infinite human store are most proper to the cultivated man? The answer must be: Those which enable him, with his individual personal qualities, to deal best and sympathize most with nature and with other human beings. It is here that the passion for service must fuse with the passion for knowledge. It is natural to imagine that the young man who has acquainted himself with economics, the science of government, sociology, and the history of civilization in its motives, objects, and methods, has a better chance of fusing the passion for knowledge with the passion for doing good than the man whose passion for pure knowledge leads him to the study of chemical or physical phenomena, or of the habits and climatic distribution of plants or animals. Yet, so intricate are the relations of human beings to the animate and inanimate creation that it is impossible to foresee with what realms of nature intense human interests may prove to be identified. Thus the generation now on the stage has suddenly learned that some of the most sensitive and exquisite human interests, such as health or disease, and life or death for those we love, are bound up with the life-histories of parasites on the blood corpuscles or of certain varieties of mosquitoes and ticks. When the spectra of the sun, stars, and other lights began to be studied, there was not the slightest anticipation that a cure for one of the most horrible diseases to which mankind is liable might be found in the X-rays. While, then, we can still see that certain subjects afford more obvious or

frequent access to means of doing good and to fortunate intercourse with our fellows than other subjects, we have learned that there is no field of real knowledge which may not suddenly prove contributory in a high degree to human happiness and the progress of civilization, and therefore acceptable as a worthy element in the truest culture.

IV. The only other element in cultivation which time will permit me to treat is the training of the constructive imagination. The imagination is the greatest of human powers, no matter in what field it works — in art or literature, in mechanical invention, in science, government, commerce, or religion; and the training of the imagination is, therefore, far the most important part of education. I use the term “constructive imagination,” because that implies the creation or building of a new thing. The sculptor, for example, imagines or conceives the perfect form of a child ten years of age. He has never seen such a thing, for a child perfect in form is never produced; he has only seen in different children the elements of perfection, here one element and there another. In his imagination he combines these elements of the perfect form, which he has only seen separated, and from this picture in his mind he carves the stone, and in the execution invariably loses his ideal — that is, falls short of it or fails to express it. Sir Joshua Reynolds points out that the painter can picture only what he has somewhere seen; but that the more he has seen and noted the surer he is to be original in his painting, because his imaginary combinations will be original. Constructive imagination is the great power of the poet as well as of the artist; and the nineteenth century has convinced us that it is also the great power of the man of science, the investigator, and the natural philosopher. What gives every

great naturalist or physicist his epoch-making results is precisely the imaginative power by which he deduces from masses of fact the guiding hypothesis or principle.

The educated world needs to recognize the new varieties of constructive imagination. Dante gave painful years to picturing on many pages of his immortal comedy of hell, purgatory, and paradise the most horrible monsters and tortures, and the most loathsome and noisome abominations that his fervid imagination could concoct out of his own bitter experiences and the manners and customs of his cruel times. Sir Charles Lyell spent many laborious years in searching for and putting together the scattered evidences that the geologic processes by which the crust of the earth has been made ready for the use of man have been, in the main, not catastrophic, but gradual and gentle; and that the forces which have been in action through past ages are, for the most part, similar to those we may see today eroding hills, cutting cañons, making placers, marshes, and meadows, and forming prairies and ocean floors. He first imagined, and then demonstrated, that the geologic agencies are not explosive and cataclysmal, but steady and patient. These two kinds of imagination — Dante's and Lyell's — are not comparable, but both are manifestations of great human power. Zola, in *La Bête Humaine*, contrives that ten persons, all connected with the railroad from Paris to Havre, shall be either murderers or murdered, or both, within eighteen months; and he adds two railroad slaughters criminally procured. The conditions of time and place are ingeniously imagined, and no detail is omitted which can heighten the effect of this homicidal fiction. Contrast this kind of constructive imagination with the kind which conceived the great wells sunk in the solid rock below Niagara that con-

tain the turbines, that drive the dynamos, that generate the electric force that turns thousands of wheels and lights thousands of lamps over thousands of square miles of adjoining territory; or with the kind that conceives the sending of human thoughts across three thousand miles of stormy sea instantaneously, on nothing more substantial than ethereal waves. There is no crime, cruelty, or lust about these last two sorts of imagining. No lurid fire of hell or human passion illumines their scenes. They are calm, accurate, just, and responsible; and nothing but beneficence and increased human well-being results from them. There is going to be room in the hearts of twentieth-century men for a high admiration of these kinds of imagination, as well as for that of the poet, artist, or dramatist.

Another kind of imagination deserves a moment's consideration — the receptive imagination which entertains and holds fast the visions which genius creates or the analogies nature suggests. A young woman is absorbed for hours in conning the squalid scenes and situations through which Thackeray portrays the malign motives and unclean soul of Becky Sharp. Another young woman watches for days the pairing, nesting, brooding, and foraging of two robins that have established home and family in the notch of a maple near her window. She notes the unselfish labors of the father and mother for each other and for their little ones, and weaves into the simple drama all sorts of protective instincts and human affections. Here are two employments for the receptive imagination. Shall systematic education compel the first but make no room for the second? The increasing attention to nature study suggests the hope that the imaginative study of human ills and woes is not to be allowed to exclude the imaginative

study of nature, and that both studies may count toward culture.

It is one lesson of the nineteenth century, then, that in every field of human knowledge the constructive imagination finds play — in literature, in history, in theology, in anthropology, and in the whole field of physical and biological research. That great century has taught us that, on the whole, the scientific imagination is quite as productive for human service as the literary or poetic imagination. The imagination of Darwin or Pasteur, for example, is as high and productive a form of imagination as that of Dante, or Goethe, or even Shakespeare, if we regard the human uses which result from the exercise of imaginative powers, and mean by human uses not merely meat and drink, clothes and shelter, but also the satisfaction of mental and spiritual needs. We must, therefore, allow in our contemplation of the cultivated man a large expansion of the fields in which the cultivated imagination may be exercised. We must extend our training of the imagination beyond literature and the fine arts, to history, philosophy, science, government, and sociology. We must recognize the prodigious variety of fruits of the imagination that the last century has given to our race.

It results from this brief survey that the elements and means of cultivation are much more numerous than they used to be; so that it is not wise to say of any one acquisition or faculty: With it cultivation becomes possible, without it, impossible. The one acquisition or faculty may be immense, and yet cultivation may not have been attained. Thus it is obvious that a man may have a wide acquaintance with music, and possess great musical skill and that wonderful imaginative power which conceives delicious melodies

and harmonies for the delight of mankind through centuries, and yet not be a cultivated man in the ordinary acceptation of the words. We have met artists who were rude and uncouth, yet possessed a high degree of technical skill and strong powers of imagination. We have seen philanthropists and statesmen whose minds have played on great causes and great affairs, and yet who lacked a correct use of their native language, and had no historical perspective or background of historical knowledge. On the other hand, is there any single acquisition or faculty which is essential to culture, except indeed a reasonably accurate and refined use of the mother tongue? Again, though we can discern in different individuals different elements of the perfect type of cultivated man, we seldom find combined in any human being all the elements of the type. Here, as in painting or sculpture, we make up our ideal from traits picked out from many imperfect individuals and put together. We must not, therefore, expect systematic education to produce multitudes of highly cultivated and symmetrically developed persons; the multitudinous product will always be imperfect, just as there are no perfect trees, animals, flowers, or crystals.

It has been my object to point out that our conception of the type of cultivated man has been greatly enlarged, and on the whole exalted, by observation of the experiences of mankind during the last hundred years. Let us as teachers accept no single element or kind of culture as the one essential; let us remember that the best fruits of real culture are an open mind, broad sympathies, and respect for all the diverse achievements of the human intellect at whatever stage of development they may actually be — the stage of fresh discovery, or bold exploration, or complete conquest.

Let us remember that the moral elements of the new education are individual choice of studies and career among a great, new variety of studies and careers, early responsibility accompanying this freedom of choice, love of truth, now that truth may be directly sought through rational inquiry, and an omnipresent sense of social obligation. These moral elements are so strong that the new forms of culture are likely to prove themselves quite as productive of morality, high-mindedness, and idealism as the old.

TWO KINDS OF EDUCATION FOR ENGINEERS ¹

By JOHN BUTLER JOHNSON

EDUCATION may be defined as a means of gradual emancipation from the thralldom of incompetence. Since incompetence leads of necessity to failure, and since competence alone leads to certain success, in any line of human endeavor, and since the natural or uneducated man is but incompetence personified, it is of supreme importance that this thralldom, or this enslaved condition in which we are all born, should be removed in some way. While unaided individual effort has worked, and will continue to work, marvels in rare instances in our so-called self-made men, these recognized exceptions acknowledge the rule that mankind in general must be aided in acquiring this complete mastery over the latent powers of head, heart, and hand. These formal aids in this process of emancipation are found in the grades of schools and colleges with which the children of this country are now blessed beyond those of almost any other country or time. The boys or girls who fail to embrace these emancipating opportunities to the fullest extent practicable, are thereby consenting to degrees of incompetence and their corresponding and resulting failures in life, which they have

¹ First given as an Address before the College of Engineering of the University of Wisconsin, and reprinted here by special permission of Mrs. Phoebe E. Johnson.

had it in their power to prevent. This they will ultimately discover to their chagrin and even grief, when it is too late to regain the lost opportunities.

There are, however, two general classes of competency which I wish to discuss today, and which are generated in the schools. These are, *competency to serve*, and *competency to appreciate and enjoy*.

By competency to serve is meant that ability to perform one's due proportion of the world's work which brings to society a common benefit, and which makes of this world a continually better home for the race, and which tends to fit the race for that immortal life in which it puts its trust.

By competency to appreciate and enjoy is meant that ability to understand, to appropriate, and to assimilate those great personal achievements of the past and present in the fields of the true, the beautiful, and the good, which brings into our lives a kind of peace, and joy, and gratitude which can be found in no other way.

It is true that all kinds of elementary education contribute alike to both of these ends, but in the so-called higher education it is too common to choose between them rather than to include them both. Since it is only service which the world is willing to pay for, it is only those competent and willing to serve a public or private utility who are compensated in a financial way. It is the education which brings a competency to serve, therefore, which is often called the utilitarian, and sometimes spoken of contemptuously as the bread-and-butter education. On the other hand, the education which gives a competency to appreciate and to enjoy is commonly spoken of as a cultural education. As to which kind of education is the higher and nobler, if they must be contrasted, it all depends on the point of view. If

personal pleasure and happiness is the chief end and aim of life, then for that class of persons who have no disposition to serve, the cultural education is the more worthy of admiration and selection (conditioned of course on the bodily comforts being so far provided for as to make all financial compensations of no object to the individual). If, however, service to others is the most worthy purpose in life, and if in addition such service brings the greatest happiness, then that education which develops the ability to serve, in some capacity, should be regarded as the higher and more worthy. This kind of education has the further advantage that the money consideration it brings makes its possessor a self-supporting member of society instead of a drone or parasite, which those people must be who cannot serve. I never could see the force of the statement that "they also serve who only stand and wait." It is possible they may serve their own pleasures, but if this is all, the statement should be so qualified.

The higher education which leads to a life of service has been known as a professional education, as law, medicine, the ministry, teaching, and the like. These have long been known as the learned professions. A learned profession may be defined as a vocation in which scholarly accomplishments are used in the service of society or of other individuals for a valuable consideration. Under such a definition every new vocation in which a very considerable amount of scholarship is required for its successful prosecution, and which is placed in the service of others, must be held as a learned profession. And as engineering now demands fully as great an amount of learning, or scholarship, as any other, it has already taken a high rank among these professions, although as a learned

profession it is scarcely half a century old. Engineering differs from all other learned professions, however, in this, that its learning has to do only with the inanimate world, the world of dead matter and force. The materials, the laws, and the forces of nature, and scarcely to any extent its life, is the peculiar field of the engineer. Not only is engineering pretty thoroughly divorced from life in general, but even with that society of which the engineer is a part his professional life has little in common. His profession is so new it practically has no past, either of history or of literature, which merits his consideration, must less his laborious study. Neither do the ordinary social or political problems enter in any way into his sphere of operations. Natural law, dead matter, and lifeless force make up his working world, and in these he lives and moves and has his professional being. Professionally regarded, what to him is the history of his own or of other races? What have the languages and the literatures of the world of value to him? What interest has he in domestic or foreign politics, or in the various social and religious problems of the day? In short, what interest is there for him in what we now commonly include in the term "the humanities"? It must be confessed that in a professional way they have little or none. Except perhaps two other modern languages by which he obtains access to the current progress in applied science, he has practically no professional interest in any of these things. His structures are made no safer or more economical; his prime-movers are no more powerful or efficient; his electrical wonders no more occult or useful; his tools no more ingenious or effective because of a knowledge of all these humanistic affairs. As a mere server of society, therefore, an engineer is about as good a tool without all this cultural knowledge

as with it. But as a citizen, as a husband and father, as a companion, and more than all, as one's own constant, perpetual, unavoidable personality, the taking into one's life of a large knowledge of the life and thought of the world, both past and present, is a very important matter indeed, and of these two kinds of education, as they affect the life-work, the professional success, and the personal happiness of the engineer, I will speak more in detail.

I am here using the term, engineer, as including that large class of modern industrial workers who make the new application of science to the needs of modern life their peculiar business and profession. A man of this class may also be called an applied scientist. Evidently he must have a large acquaintance with such practical sciences as surveying, physics, chemistry, geology, metallurgy, electricity, applied mechanics, kinematics, machine design, power generation and transmission, structural designing, land and water transportation, etc. And as a common solvent of all the problems arising in these various subjects he must have acquired an extended knowledge of mathematics, without which he would be like a sailor with neither compass nor rudder. To the engineer mathematics is a tool of investigation, a means to an end, and not the end itself. The same may be said of his physics, his chemistry, and of all his other scientific studies. They are all to be made tributary to the solution of problems which may arise in his professional career. His entire technical education, in fact, is presumably of the useful character, and acquired for specific useful ends. Similarly he needs a free and correct use of his mother tongue, that he may express himself clearly and forcibly both in speech and composition, and an ability to read both French and German, that he may read the current technical literature

in the two other languages which are most fruitful in new and original technical matter.

It is quite true that the mental development, the growth of one's mental powers and the command over the same, which comes incidentally in the acquisition of all this technical knowledge, is of far more value than the knowledge itself, and hence great care is given in all good technical schools to the mental processes of the students, and to a thorough and logical method of presentation and of acquisition. In other words, while you are under our instruction it is much more important that you should think consecutively, rationally, and logically, than that your conclusions should be numerically correct. But as soon as you leave the school the exact reverse will hold. Your employer is not concerned with your mental development, or with your mental processes, so long as your results are correct, and hence we must pay some attention to numerical accuracy in the school, especially in the upper classes. We must remember, however, that the mind of the engineer is primarily a workshop and not a warehouse or lumber-room of mere information. Your facts are better stored in your library. Room there is not so valuable as it is in the mind, and the information, furthermore, is better preserved. Memory is as poor a reliance to the engineer as to the accountant. Both alike should consult their books when they want the exact facts. Knowledge alone is not power. The ability to use knowledge is a latent power, and the actual use of it is power. Instead of storing your minds with useful knowledge, therefore, I will say to you, store your minds with useful tools, and with a knowledge only of how to use such tools. Then your minds will become mental workshops, well fitted for turning out products of untold value to your

day and generation. Everything you acquire in your course in this college, therefore, you should look upon as mental tools with which you are equipping yourselves for your future careers. It may well be that some of your work will be useful rather for the sharpening of your wits and for the development of mental grasp, just as gymnastic exercise is of use only in developing your physical system. In this case it has served as a tool of development instead of one for subsequent use. Because all your knowledge here gained is to serve you as tools it must be acquired quantitatively rather than qualitatively. First, last, and all the time, you are required to know not simply how, but how much, how far, how fast, to what extent, at what cost, with what certainty, and with what factor of safety. In the cultural education, where one is learning only to appreciate and to enjoy, it may satisfy the average mind to know that coal burning under a boiler generates steam which, entering a cylinder, moves a piston which turns the engine, and stop with that. But the engineer must know how many heat units there are in a pound of coal burned, how many of these are generated in the furnace, how many of them pass into the water, how much steam is consumed by the engine per horse-power per hour, and finally how much effective work is done by the engine per pound of coal fed to the furnace. Merely qualitative knowledge leads to the grossest errors of judgment and is of that kind of little learning which is a dangerous thing. At my summer home I have a hydraulic ram set below a dam, for furnishing a water supply. Nearby is an old abandoned water-power grist mill. A man and his wife were looking at the ram last summer and the lady was overheard to ask what it was for. The man looked about, saw the idle water-wheel of the old mill, and ventured

the opinion that it must be used to run the mill! He knew a hydraulic ram when he saw it and he knew it was used to generate power, and that power would run a mill. Ergo, a hydraulic ram will run a mill. This is on a par with thousands of similar errors of judgment where one's knowledge is qualitative only. All engineering problems are purely quantitative from beginning to end, and so are all other problems, in fact, whether material, or moral, or financial, or commercial, or social, or political, or religious. All judgments passed on such problems, therefore, must be quantitative judgments. How poorly prepared to pass such judgments are those whose knowledge is qualitative only! Success in all fields depends very largely on the accuracy of one's judgment in foreseeing events, and in engineering it depends wholly on such accuracy. An engineer must see all around his problem, and take account of every contingency which can happen in the ordinary course of events. When all such contingencies have been foreseen and provided against, then the unexpected cannot happen, as everything has been foreseen. It is customary to say, "The unexpected always happens." This of course is untrue. What is meant is, "It is only the unexpected which happens," for the very good reason that what has been anticipated has been provided against.

In order that knowledge may be used as a tool in investigations and in the solution of problems, it must be so used constantly during the period of its acquisition. Hence the large amount of drawing-room, field, laboratory, and shop practice introduced into our engineering courses. We try to make theory and practice go hand in hand. In fact we teach that theory is only a generalized practice. From the necessary facts, observed in special experiments or in

actual practice, and which cover a sufficiently wide range of conditions, general principles are deduced from which effects of given like causes can be foreseen or derived, for new cases arising in practice. This is like saying, in surveying, that with a true and accurate hind-sight an equally true and accurate forward course can be run. Nearly all engineering knowledge, outside the pure mathematics, is of this experimental or empirical character, and we generally know who made the experiments, under what conditions, over what range of varying conditions, how accordant his results were, and hence what weight can be given to his conclusions. When we can find in our engineering literature no sufficiently accurate data, or none exactly covering the case in hand, we must set to work to make a set of experiments which will cover the given conditions, so as to obtain numerical factors, or possibly new laws, which will serve to make our calculations prove true in the completed structure or scheme. The ability to plan and carry out such crucial tests and experiments is one of the most important objects of an engineering college training, and we give our students a large amount of such laboratory practice. In all such work it is the absolute truth we are seeking, and hence any guessing at data, or falsifying of records, or "doctoring" of the computations is of the nature of a professional crime. Any copying of records from other observers, when students are supposed to make their own observations, is both a fraud upon themselves as well as dishonest to their instructor, and indicates a disposition of mind which has nothing in common with that of the engineer, who is always and everywhere a truth-seeker and a truth-tester. The sooner such a person leaves the college of engineering the better for him and the engineering profession. Men

in other professions may blunder or play false with more or less impunity. Thus the lawyer may advocate a bad cause without losing caste; a physican may blunder at will, but his mistakes are soon buried out of sight; a minister may advocate what he no longer believes himself, and feel that the cause justifies his course; but the mistakes of the engineer are quick to find him out and to proclaim aloud his incompetence. He is the one professional man who is obliged to be right, and for whom sophistry and self-deception are a fatal poison. But the engineer must be more than honest: he must be able to discern the truth. With him an honest motive is no justification. He must not only believe he is right: he must know that he is right. And it is one of the greatest elements of satisfaction in this profession, that it is commonly possible to secure in advance this almost absolute certainty of results. We deal with fixed laws and forces, and only so far as the materials used may be faulty, or of unknown character, or as contingencies could not be foreseen or anticipated, does a necessary ignorance enter into the problem.

It must not be understood, however, that with all of both theory and practice we are able to give our students in their four- or five-year course, they will be full-fledged engineers when they leave us. They ought to be excellent material out of which, with a few years' actual practice, they would become engineers of the first order. Just as a young physician must have experience with actual patients, and as a young lawyer must have actual experience in the courts, so must an engineer have experience with real problems before he can rightfully lay claim to the title of engineer. And in seeking this professional practice they must not be too choice. As a rule the higher up one begins the sooner his

promotion stops, and the lower down he begins the higher will he ultimately climb. The man at the top should know in a practical way all the work over which he is called upon to preside, and this means beginning at the bottom. Too many of our graduates refuse to do this, and so they stop in a middle position, instead of coming into the management of the business, which position is reserved for a man who knows it all from the bottom up. Please understand that no position is too menial in the learning of a business. But as your college training has enabled you to learn a new thing rapidly, you should rapidly master these minor details of any business, and in a few years you should be far ahead of the ordinary apprentice who went to work from the grammar or from the high school. The great opportunity for the engineer of the future is in the direction and management of our various manufacturing industries. We are about to become the world's workshop, and as competition grows sharper and as greater economies become necessary, the technically trained man will become an absolute necessity in the leading positions in all our industrial works. These are positions hitherto held by men who have grown up with the business, but without technical training. They are being rapidly supplanted by technical men, who, however, must serve their apprenticeship in the business from the bottom up. With this combination of theory and practice, and with the American genius for invention, and with our superb spirit of initiative and of independence, we are already setting a pace industrially which no other nation can keep, and which will soon leave all others hopelessly behind.

In the foregoing description of the technical education and work of the engineer, the engineer himself has been considered as a kind of human tool to be used in the interest

of society. His service to society alone has been in contemplation. But as the engineer has also a personality which is capable of appreciation and enjoyment of the best this world has produced in the way of literature and art; as he is to be a citizen and a man of family; and, moreover, since he has a conscious self with which he must always commune and from which he cannot escape, it is well worth his while to see to it that this self, this husband and father, this citizen and neighbor, is something more than a tool to be worked in other men's interests, and that his mind shall contain a library, a parlor, and a drawing-room, as well as a workshop. And yet how many engineers' minds are all shop and out of which only shop-talk can be drawn! Such men are little more than animated tools, worked in the interest of society. They are liable to be something of a bore to their families and friends, almost a cipher in the social and religious life of the community, and a weariness to the flesh to their more liberal-minded professional brethren. Their lives are one continuous grind, which has for them doubtless a certain grim satisfaction, but which is monotonous and tedious in comparison with what they might have been. Even when valued by the low standard of money-making they are not nearly so likely to secure lucrative incomes as they would be with a greater breadth of information and worldly interest. They are likely to stop in snug professional berths which they find ready-made for them, under some sort of fixed administration, and maintain through life a subordinate relation to directing heads who with a tithe of their technical ability are yet able, with their worldly knowledge, their breadth of interests, and their fellowship with men, to dictate to these narrower technical subordinates, and to fix for them their fields of operation.

In order, therefore, that the technical man, who in material things knows what to do and how to do it, may be able to get the thing done and to direct the doing of it, he must be an engineer of men and of capital as well as of the materials and forces of nature. In other words, he must cultivate human interests, human learning, human associations, and avail himself of every opportunity to further these personal and business relations. If he can make of himself a good business man, or as good a manager of men as he usually makes of himself in the field of engineering he has chosen, there is no place too great, and no salary too high for him to aspire to. Of such men are our greatest railroad presidents and general managers, and the directors of our largest industrial establishments. While most of this kind of knowledge must also be acquired in actual practice, yet some of it can best be obtained in college. I shall continue to urge upon all young men who can afford it to take either the combined six-year college and engineering course, described in our catalogue, or the five-year course in the college of engineering, taking as extra studies many things now taught in our school of commerce. The one crying weakness of our engineering graduates is ignorance of the business, the social, and the political world, and of human interests in general. They have little knowledge in common with the graduates of our literary colleges, and hence often find little pleasure in such associations. They become clannish, run mostly with men of their class, take little interest in the commercial or business departments of the establishments with which they are connected, and so become more and more fixed in their inanimate world of matter and force. I beseech you, therefore, while yet students, to try to broaden your interests, extend your horizons now into other fields,

even but for a bird's-eye view, and profit, so far as possible, by the atmosphere of universal knowledge which you can breathe here through the entire period of your college course. Try to find a chum who is in another department; go to literary societies; haunt the library; attend the meetings of the Science Club; and in every way possible, with a peep here and a word there, improve to the utmost these marvellous opportunities which will never come to you again. Think not of tasks; call no assignments by such a name. Call them opportunities, and cultivate a hunger and thirst for all humanistic knowledge outside your particular world of dead matter, for you will never again have such an opportunity, and you will be always thankful that you made good use of this, your one chance in a lifetime.

For your own personal happiness, and that of your immediate associates, secure in some way, either in college or after leaving the same, an acquaintance with the world's best literature, with the leading facts of history, and with the biographies of many of the greatest men in pure and applied science, as well as of statesmen and leaders in many fields. With this knowledge of great men, great thoughts, and great deeds, will come that lively interest in men and affairs which is held by educated men generally, and which will put you on an even footing with them in your daily intercourse. This kind of knowledge, also, elevates and sweetens the intellectual life, leads to the formation of lofty ideals, helps one to a command of good English, and in a hundred ways refines, and inspires to high and noble endeavor. This is the cultural education leading to appreciation and enjoyment man is assumed to possess.

Think not, however, that I depreciate the peculiar work of the engineering college. It is by this kind of education

alone that America has already become supreme in nearly all lines of material advancement. I am only anxious that the men who have made these things possible shall reap their full share of the benefits.

In conclusion, let me congratulate you on having selected courses of study which will bring you into the most intimate relations with the world's work of your generation. All life today is one endless round of scientific applications of means to ends, but such applications are still in their infancy. A decade now sees more material progress than a century did in the past. Not to be scientifically trained in these matters is equivalent today to a practical exclusion from all part and share in the industrial world. The entire direction of the world's industry and commerce is to be in your hands. You are also charged with making the innumerable new discoveries and inventions which will come in your generation and almost wholly through men of your class. The day of the inventor, ignorant of science and of nature's laws, has gone by. The mere mechanical contrivances have been pretty well exhausted. Henceforth profitable invention must include the use or embodiment of scientific principles with which the untrained artisan is unacquainted. More and more will invention be but the scientific application of means to ends, and this is what we teach in the engineering schools. Already our patent office is much puzzled to distinguish between engineering and invention. Since engineering proper consists in the solution of new problems in the material world, and invention is likewise the discovery of new ways of doing things, they cover the same field. But an invention is patentable, while an engineering solution is not. Invention is supposed in law to be an in-born faculty by which new truth is conceived by no definable

way of approach. If it had not been reached by this particular individual it is assumed that it might never have been known. An engineering solution is supposed, and rightly, to have been reached by logical processes, through known laws of matter, and force, and motion, so that another engineer, given the same problem, would probably have reached the same or an equivalent result. And this is not patentable. Already a very large proportion of the patents issued could be nullified on this ground if the attorneys only knew enough to make their case. More and more, therefore, are the men of your class to be charged with the responsibility and to be credited with the honor of the world's progress, and more and more is the world's work to be placed under your direction. The world will be remade by every succeeding generation, and all by the technically educated class. These are your responsibilities and your honors. The tasks are great and great will be your rewards. That you may fitly prepare yourself for them is the hope and trust of your teachers in this college of engineering.

I will close this address by quoting Professor Huxley's definition of a liberal education. Says Huxley, "That man, I think, has had a liberal education, who has been so trained in youth that his body is the ready servant of his will, and does with ease and pleasure all the work that, as a mechanism, it is capable of; whose intellect is a clear, cold, logic-engine, with all its parts of equal strength, and in smooth working order; ready, like a steam engine, to be turned to any kind of work, and spin the gossamers as well as forge the anchors of the mind; whose mind is stored with a knowledge of the great and fundamental truths of Nature and of the laws of her operations; one who, no stunted ascetic, is full of life and fire, but whose passions are trained

to come to heel by a vigorous will, the servant of a tender conscience; who has learned to love all beauty, whether of Nature or of art, to hate all vileness, and to respect others as himself. Such an one and no other, I conceive, has had a liberal education; for he is, as completely as a man can be, in harmony with Nature. He will make the best of her, and she of him. They will get on together rarely; she as his ever-beneficent mother; he as her mouthpiece, her conscious self, her minister and interpreter."

A POISONOUS PHRASE ¹

BY PRESIDENT WILLIAM DEWITT HYDE

Bowdoin College

IN warfare we have ceased poisoning wells, and, if Dr. Wiley has his way, we shall not much longer poison food. Yet we still allow phrases to pass current among us which are more deadly than saccharine and copper sulphate, malaria and typhoid fever. For a whole unconscious philosophy of life may be wrapped up in a phrase; as in the case cited in Dean Briggs' *Girls and Education* of the man whose salutation was not, "How do you do?" but, "How do you stand it?"

Sometimes these phrases are wholesome and therapeutic. In the rich soil of student conversation, however, weeds grow more profusely and rankly than flowers and vegetables. About a decade ago there sprang up a noxious weed, responsible for much loafing among the well-to-do — "C is a gentleman's grade." President Lowell, soon after his inauguration, dealt that phrase its death-blow. A student whom he asked how he was getting on replied, "Pretty well; I'm getting gentleman's grade." "Oh," said President Lowell, "you are getting A or E. A gentleman either does his best, or doesn't pretend to do anything."

A phrase just now thrusting itself into academic use sets

¹ Reprinted from *The Outlook* of May 18, 1912, by special permission of the author and the publishers.

the ideal one notch lower than the discredited "gentleman's grade." It is the phrase, "Get by."

I had often heard the phrase from both undergraduates and students in professional schools; but I never felt its full force until I heard its passionate denunciation by a business man with whom I was playing golf. We were talking about a certain young man whom he had recently met, and whom he had asked how he was getting on. "I am hoping to get by," was the reply. "'Hoping to get by!'" exclaimed my friend, who, by the way, has a passion for perfection, whether it be in golf or a bond issue; "'hoping to get by!' If I have a case where I am right, but it requires exhaustive knowledge and skillful interpretation to make the judge and jury see it, do you suppose I would employ a man who was 'hoping to get by'?"

The phrase contains as much moral poison as a two-word phrase can hold. It carries the implication that the course of study, or the examination, and time and effort spent in preparation for it, are evils; and that the only good is a vaguely defined state of existence, unrelated to present effort, which the lapse of time will bring us after these evils, with as little effort as possible, have been endured and survived. It is a new form of the weakling's old device of wishing time and the opportunities it brings away.

And young men, if courtesy forbids them to say as much to their fellows, must think, every time they hear the poisonous phrase, that it is the mark of a coward.

INAUGURAL ADDRESS¹

BY PRESIDENT ALEXANDER MEIKLEJOHN

Amherst College

I

WHAT do our teachers believe to be the aim of college instruction? Wherever their opinions and convictions find expression there is one contention which is always in the foreground, namely, that to be liberal a college must be essentially intellectual. It is a place, the teachers tell us, in which a boy, forgetting all things else, may set forth on the enterprise of learning. It is a time when a young man may come to awareness of the thinking of his people, may perceive what knowledge is and has been and is to be. Whatever light-hearted undergraduates may say, whatever the opinions of solicitous parents, of ambitious friends, of employers in search of workmen, of leaders in church or state or business — whatever may be the beliefs and desires and demands of outsiders — the teacher within the college, knowing his mission as no one else can know it, proclaims that mission to be the leading of his pupil into the life intellectual. The college is primarily not a place of the body, nor of the feelings, nor even of the will; it is, first of all, a place of the mind.

¹ Printed by special permission of President Meiklejohn.

II

Against this intellectual interpretation of the college our teachers find two sets of hostile forces constantly at work. Outside the walls there are the practical demands of a busy commercial and social scheme; within the college there are the trivial and sentimental and irrational misunderstandings of its own friends. Upon each of these our college teachers are wont to descend as Samson upon the Philistines, and when they have had their will, there is little left for another to accomplish.

As against the immediate practical demands from without, the issue is clear and decisive. College teachers know that the world must have trained workmen, skilled operatives, clever buyers and sellers, efficient directors, resourceful manufacturers, able lawyers, ministers, physicians, and teachers. But it is equally true that in order to do its own work, the liberal college must leave the special and technical training for these trades and professions to be done in other schools and by other methods. In a word, the liberal college does not pretend to give all the kinds of teaching which a young man of college age may profitably receive; it does not even claim to give all the kinds of intellectual training which are worth giving. It is committed to intellectual training of the liberal type, whatever that may mean, and to that mission it must be faithful. One may safely say, then, on behalf of our college teachers, that their instruction is intended to be radically different from that given in the technical school or even in the professional school. Both of these institutions are practical in a sense in which the college, as an intellectual institution, is not. In the technical school the pupil is taught how to do some one of the

mechanical operations which contribute to human welfare. He is trained to print, to weave, to farm, to build; and for the most part he is trained to do these things by practice rather than by theory. His possession when he leaves the school is not a stock of ideas, of scientific principles, but a measure of skill, a collection of rules of thumb. His primary function as a tradesman is not to understand but to do, and in doing what is needed he is following directions which have first been thought out by others and are now practiced by him. The technical school intends to furnish training which, in the sense in which we use the term, is not intellectual but practical.

In a corresponding way the work of the professional school differs from that of the liberal college. In the teaching of engineering, medicine, or law we are or may be beyond the realm of mere skill and within the realm of ideas and principles. But the selection and the relating of these ideas is dominated by an immediate practical interest which cuts them off from the intellectual point of view of the scholar. If an undergraduate should take away from his studies of chemistry, biology, and psychology only those parts which have immediate practical application in the field of medicine, the college teachers would feel that they had failed to give the boy the kind of instruction demanded of a college. It is not their purpose to furnish applied knowledge in this sense. They are not willing to cut up their sciences into segments and to allow the student to select those segments which may be of service in the practice of an art or a profession. In one way or another the teacher feels a kinship with the scientist and the scholar which forbids him to submit to this domination of his instruction by the demands of an immediate practical interest. Whatever it may mean,

he intends to hold the intellectual point of view and to keep his students with him if he can. In response, then, to demands for technical and professional training, our college teachers tell us that such training may be obtained in other schools; it is not to be had in a college of liberal culture.

In the conflict with the forces within the college our teachers find themselves fighting essentially the same battle as against the foes without. In a hundred different ways the friends of the college — students, graduates, trustees, and even colleagues — seem to them so to misunderstand its mission as to minimize or to falsify its intellectual ideals. The college is a good place for making friends; it gives excellent experience in getting on with men; it has exceptional advantages as an athletic club; it is a relatively safe place for a boy when he first leaves home; on the whole it may improve a student's manners; it gives acquaintance with lofty ideals of character, preaches the doctrine of social service, exalts the virtues and duties of citizenship. All these conceptions seem to the teacher to hide or to obscure the fact that the college is fundamentally a place of the mind, a time for thinking, an opportunity for knowing. And perhaps in proportion to their own loftiness of purpose and motive they are the more dangerous as tending all the more powerfully to replace or to nullify the underlying principle upon which they all depend. Here again when misconception clears away, one can have no doubt that the battle of the teacher is a righteous one. It is well that a boy should have four good years of athletic sport, playing his own games and watching the games of his fellows; it is well that his manners should be improved; it is worth while to make good friends; it is very desirable to develop the power of understanding and working with other men; it

is surely good to grow in strength and purity of character, in devotion to the interests of society, in readiness to meet the obligations and opportunities of citizenship. If any one of these be lacking from the fruits of a college course we may well complain of the harvest. And yet is it not true that by sheer pressure of these, by the driving and pulling of the social forces within and without the college, the mind of the student is constantly torn from its chief concern? Do not our social and practical interests distract our boys from the intellectual achievements which should dominate their imagination and command their zeal? I believe that one may take it as the deliberate judgment of the teachers of our colleges today that the function of the college is constantly misunderstood, and that it is subjected to demands which, however friendly in intent, are yet destructive of its intellectual efficiency and success.

III

How then shall we justify the faith of the teacher? What reason can we give for our exaltation of intellectual training and activity? To this question two answers are possible. First, knowledge and thinking are good in themselves. Secondly, they help us in the attainment of other values in life which without them would be impossible. Both these answers may be given and are given by college teachers. Within them must be found whatever can be said by way of explanation and justification of the work of the liberal college.

The first answer receives just now far less of recognition than it can rightly claim. When the man of the world is told that a boy is to be trained in thinking just because of the joys and satisfactions of thinking itself, just in order

that he may go on thinking as long as he lives, the man of the world has been heard to scoff and to ridicule the idle dreaming of scholarly men. But if thinking is not a good thing in itself, if intellectual activity is not worth while for its own sake, will the man of the world tell us what is? There are those among us who find so much satisfaction in the countless trivial and vulgar amusements of a crude people that they have no time for the joys of the mind. There are those who are so closely shut up within a little round of petty pleasures that they have never dreamed of the fun of reading and conversing and investigating and reflecting. And of these one can only say that the difference is one of taste, and that their tastes seem to be relatively dull and stupid. Surely it is one function of the liberal college to save boys from that stupidity, to give them an appetite for the pleasures of thinking, to make them sensitive to the joys of appreciation and understanding, to show them how sweet and captivating and wholesome are the games of the mind. At the time when the play element is still dominant it is worth while to acquaint boys with the sport of facing and solving problems. Apart from some of the experiences of friendship and sympathy, I doubt if there are any human interests so permanently satisfying, so fine and splendid in themselves, as are those of intellectual activity. To give our boys that zest, that delight in things intellectual, to give them an appreciation of a kind of life which is well worth living, to make them men of intellectual culture — that certainly is one part of the work of any liberal college.

On the other hand, the creation of culture as so defined can never constitute the full achievement of the college. It is essential to awaken the impulses of inquiry, of experi-

ment, of investigation, of reflection, the instinctive cravings of the mind. But no liberal college can be content with this. The impulse to thinking must be questioned and rationalized as must every other instinctive response. It is well to think, but what shall we think about? Are there any lines of investigation and reflection more valuable than others, and if so, how is their value to be tested? Or again, if the impulse for thinking comes into conflict with other desires and cravings, how is the opposition to be solved? It has sometimes been suggested that our man of intellectual culture may be found like Nero fiddling with words while all the world about him is aflame. And the point of the suggestion is not that fiddling is a bad and worthless pastime, but rather that it is inopportune on such an occasion, that the man who does it is out of touch with his situation, that his fiddling does not fit his facts. In a word, men know with regard to thinking, as with regard to every other content of human experience, that it cannot be valued merely in terms of itself. It must be measured in terms of its relation to other contents and to human experience as a whole. Thinking is good in itself — but what does it cost of other things, and what does it bring of other values? Place it amid all the varied contents of our individual and social experience, measure it in terms of what it implies, fix it by means of its relations, and then you will know its worth not simply in itself but in that deeper sense which comes when human desires are rationalized and human lives are known in their entirety, as well as they can be known by those who are engaged in living them.

In this consideration we find the second answer of the teacher to the demand for justification of the work of the college. Knowledge is good, he tells us, not only in itself,

but in its enrichment and enhancement of the other values of our experience. In the deepest and fullest sense of the words, knowledge pays. This statement rests upon the classification of human actions into two groups, those of the instinctive type and those of the intellectual type. By far the greater part of our human acts are carried on without any clear idea of what we are going to do or how we are going to do it. For the most part our responses to our situations are the immediate responses of feeling, of perception, of custom, of tradition. But slowly and painfully, as the mind has developed, action after action has been translated from the feeling to the ideational type; in wider and wider fields men have become aware of their own modes of action; and more and more they have come to understanding, to knowledge of themselves and of their needs. And the principle underlying all our educational procedure is that, on the whole, actions become more successful as they pass from the sphere of feeling to that of understanding. Our educational belief is that in the long run if men know what they are going to do and how they are going to do it, and what is the nature of the situation with which they are dealing, their response to that situation will be better adjusted and more beneficial than are the responses of the feeling type in like situations.

It is all too obvious that there are limits to the validity of this principle. If men are to investigate, to consider, to decide, then action must be delayed and we must pay the penalty of waiting. If men are to endeavor to understand and know their situations, then we must be prepared to see them make mistakes in their thinking, lose their certainty of touch, wander off into pitfalls and illusions and fallacies of thought, and in consequence secure for the time results

far lower in value than those of the instinctive response which they seek to replace. The delays and mistakes and uncertainties of our thinking are a heavy price to pay, but it is the conviction of the teacher that the price is as nothing when compared with the goods which it buys. You may point out to him the loss when old methods of procedure give way before the criticism of understanding, you may remind him of the pain and suffering when old habits of thought and action are replaced, you may reprove him for all the blunders of the past; but in spite of it all he knows and you know that in human lives taken separately and in human life as a whole men's greatest lack is the lack of understanding, their greatest hope to know themselves and the world in which they live.

Within the limits of this general educational principle the place of the liberal college may easily be fixed. In the technical school pupils are prepared for a specific work and are kept for the most part on the plane of perceptual action, doing work which others understand. In the professional school, students are properly within the realm of ideas and principles, but they are still limited to a specific human interest with which alone their understanding is concerned. But the college is called liberal as against both of these because the instruction is dominated by no special interest, is limited to no single human task, but is intended to take human activity as a whole, to understand human endeavors not in their isolation but in their relations to one another and to the total experience which we call the life of our people. And just as we believe that the building of ships has become more successful as men have come to a knowledge of the principles involved in their construction; just as the practice of medicine has become more successful as we have

come to a knowledge of the human body, of the conditions within it and the influences without; — just so the teacher in the liberal college believes that life as a total enterprise, life as it presents itself to each one of us in his career as an individual — human living — will be more successful in so far as men come to understand it and to know it as they attempt to carry it on. To give boys an intellectual grasp on human experience — this it seems to me is the teacher's conception of the chief function of the liberal college.

May I call attention to the fact that this second answer of the teacher defines the aim of the college as avowedly and frankly practical. Knowledge is to be sought chiefly for the sake of its contribution to the other activities of human living. But on the other hand, it is as definitely declared that in method the college is fully and unreservedly intellectual. If we can see that these two demands are not in conflict but that they stand together in the harmonious relation of means and ends, of instrument and achievement, of method and result, we may escape many a needless conflict and keep our educational policy in singleness of aim and action. To do this we must show that the college is intellectual, not as opposed to practical interests and purposes, but as opposed to unpractical and unwise methods of work. The issue is not between practical and intellectual aims, but between the immediate and the remote aim, between the hasty and the measured procedure, between the demand for results at once and the willingness to wait for the best results. The intellectual road to success is longer and more roundabout than any other, but they who are strong and willing for the climbing are brought to higher levels of achievement than they could possibly have attained had they gone straight forward in the pathway of quick returns. If this were not

true the liberal college would have no proper place in our life at all. In so far as it is true the college has a right to claim the best of our young men to give them its preparation for the living they are to do.

V¹

And now, finally, . . . may I suggest two matters of policy which seem to me to follow from the definition of education which we have taken. The first concerns the content of the college course; the second has to do with the method of its presentation to the undergraduate.

We have said that the system of free election is natural for those to whom knowledge is simply a number of separate departments. It is equally true that just in so far as knowledge attains unity, just so far as the relations of the various departments are perceived, freedom of election by the student must be limited. For it at once appears that on the one side there are vast ranges of information which have virtually no significance for the purposes of a liberal education, while on the other hand there are certain elements so fundamental and vital that without any one of them a liberal education is impossible.

I should like to indicate certain parts of human knowledge which seem to me so essential that no principle of election should ever be allowed to drive them out of the course of any college student.

First, a student should become acquainted with the fundamental motives and purposes and beliefs which, clearly or unclearly recognized, underlie all human experience and bind it together. He must perceive the moral strivings,

¹ With President Meiklejohn's consent, section IV and two or three other brief passages have been omitted.

the intellectual endeavors, the esthetic experiences of his race, and closely linked with these, determining and determined by them, the beliefs about the world which have appeared in our systems of religion. To investigate this field, to bring it to such clearness of formulation as may be possible, is the task of philosophy — an essential element in any liberal education. Secondly, as in human living, our motives, purposes, and beliefs have found expression in institutions — those concerted modes of procedure by which we work together; — a student should be made acquainted with these. He should see and appreciate what is intended, what accomplished, and what left undone by such institutions as property, the courts, the family, the church, the mill. To know these as contributing and failing to contribute to human welfare is the work of our social or humanistic sciences, into which a boy must go on his way through the liberal college. Thirdly, in order to understand the motives and the institutions of human life one must know the conditions which surround it, the stage on which the game is played. To give this information is the business of astronomy, geology, physics, chemistry, biology, and other descriptive sciences. These a boy must know, so far as they are significant and relevant to his purpose. Fourthly, as all three of these factors — the motives, the institutions, the natural processes — have sprung from the past and have come to be what they are by change upon change in the process of time, the student of human life must try to learn the sequence of events from which the present has come. The development of human thought and attitude, the development of human institutions, the development of the world and of the beings about us — all these must be known, as throwing light upon present problems, present instru-

mentalities, present opportunities in the life of human endeavor. And in addition to these four studies which render human experience in terms of abstract ideas, a liberal education must take account of those concrete representations of life which are given in the arts, and especially in the art of literature. It is well that a boy should be acquainted with his world not simply as expressed by the principles of knowledge but also as depicted by the artist with all the vividness and definiteness which are possible in the portrayal of individual beings in individual relationships. These five elements, then, a young man must take from a college of liberal training — the contributions of philosophy, of humanistic science, of natural science, of history, and of literature. So far as knowledge is concerned, these at least he should have, welded together in some kind of interpretation of his own experience and of the world in which he lives.

My second suggestion is that our college curriculum should be so arranged and our instruction so devised that its vital connection with the living of men should be obvious even to an undergraduate. A little while ago I heard one of the most prominent citizens of this country speaking of his college days, and he said, "I remember so vividly those few occasions on which the professor would put aside the books and talk like a real man about real things." Oh, the bitterness of those words to the teacher! Our books are not dealing with the real things, and for the most part we are not real men either, but just old fogies and bookworms. And to be perfectly frank about the whole matter, I believe that in large measure our pupils are indifferent to their studies simply because they do not see that these are important.

Now if we really have a vital course of study to present,

I believe that this difficulty can in a large measure be overcome. It is possible to make a Freshman realize the need of translating his experience from the forms of feeling to those of ideas. He can and he ought to be shown that now, his days of mere tutelage being over, it is time for him to face the problems of his people, to begin to think about those problems for himself, to learn what other men have learned and thought before him, in a word, to get himself ready to take his place among those who are responsible for the guidance of our common life by ideas and principles and purposes. If this could be done, I think we should get from the reality-loving American boy something like an intellectual enthusiasm, something of the spirit that comes when he plays a game that seems to him really worth playing. But I do not believe that this result can be achieved without a radical reversal of the arrangement of the college curriculum. I should like to see every Freshman at once plunged into the problems of philosophy, into the difficulties and perplexities about our institutions, into the scientific accounts of the world, especially as they bear on human life, into the portrayals of human experience which are given by the masters of literature. If this were done by proper teaching, it seems to me the boy's college course would at once take on significance for him; he would understand what he is about; and though he would be a sadly puzzled boy at the end of the first year, he would still have before him three good years of study, of investigation, of reflection, and of discipleship, in which to achieve, so far as may be, the task to which he has been set. Let him once feel the problems of the present, and his historical studies will become significant; let him know what other men have discovered and thought about his problems, and he will be ready to deal with them himself.

But in any case, the whole college course will be unified and dominated by a single interest, a single purpose — that of so understanding human life as to be ready and equipped for the practice of it. And this would mean for the college, not another seeking of the way of quick returns, but rather an escape from aimless wanderings in the mere by-paths of knowledge, a resolute climbing on the high road to a unified grasp upon human experience.

THE PHILOSOPHY OF EDUCATION¹

INAUGURAL ADDRESS

BY PRESIDENT JOHN GRIER HIBBEN

Princeton University

IN entering formally upon the duties of the high office of president of Princeton University, I wish to present in my inaugural address the essential principles of our philosophy of education. We believe that the chief end of an education is the making of a man. It is the process of developing a power within which enables the human being to dominate the instincts and habits of his animal nature, assert himself as a free personality, and direct his life according to the light of reason. While he is a part of the natural world, man belongs also to the world of mind and of spirit. The particular function of education is to give him the power of freedom and to make him sensible of the duties and worthy of the privileges of a person in the midst of a universe of things.

Personality, however, is not mechanically formed from without, but must be evoked from within. The appeal of the teacher, therefore, is constantly directed to the inner spirit of the student, that spirit of life which informs the man and puts him into possession of his powers. The forces which find play in the activities of the mind are like the architectonic principle which is at work in the inner nature of a plant, fashioning it into the form of grace and

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beauty. Thus, with the emancipation of a free spirit at the sources of his being, the man within begins to develop both in power and in promise.

It is of the very nature of education, however, that it does not result in a complete and finished product, but rather in a progressive process. There is nothing final about it. Its achievements always mark new beginnings. It is the power of an endless life. To say that a man is educated signifies that he has finished merely the preliminary stages of a continuous and progressive development. Education, therefore, must always be defined in terms of life, of growth, of progress. Its peculiar function is the conservation of those great human forces which make for the advancement of knowledge and the civilization of the world. We hear much today of the conservation of our national resources, our forests, the treasures of our mines, and the vast material wealth of our land. But while we are emphasizing the necessity of a national economy we should not overlook the fact that the task of conserving and of developing the resources of the intellectual, moral, and spiritual power in our nation is the one supreme task. To conserve these powers, to cause them to develop and to prevail, to deliver free spirits from the bondage of ignorance and of material impulse, from the bondage of authority, of tradition, of public opinion, of passing fashion, and of prejudice, and to direct these liberated human forces to the highest ends, that is the art of education.

There is a common phrase, "to receive an education," against which I would most emphatically protest. No one receives an education any more than he receives health or strength or life. It is the fruit of a firm and intelligent will. It is gained only by active effort, continuous and determined.

An education is won by work; and the labors to be undertaken and the end to be attained may all be summed up in the command, *Be a person*. This is a command which is not merely the work of the teacher, but is essentially an inner compulsion possessing the solemn authority of self-legislation. It is the determination to be something more than a creature of circumstance; it is the purpose to realize in the full measure of one's possibilities the power and the dignity of humanity. While plant and animal develop according to the power which they may possess of adapting themselves to their environment, it is the distinctive characteristic of man that he progresses through his ability to adapt his environment to himself, and thus he determines the world in which he lives.

As freedom is the distinctive mark of a vigorous personality, all the processes of education must be directed to secure this essential end. Therefore, the ideal university education may be described as consisting of two phases — a phase in which every effort is directed to the attainment of freedom, and, secondly, a progressive phase of development in which the freedom gained in the earlier stages finds for itself varied pursuits and pleasures in the fields of knowledge.

Hence it would seem essential that in the early years of one's university experience those studies should be pursued which are peculiarly conducive to the discipline and training of the mind, and eventually to the evolution of a self-determining and self-realizing will. They deserve the name of liberal studies so far as they may tend to free the mind from the natural and artificial obstacles to its progressive development.

One who is to maintain the health and growth of his intellectual life must come surely at some later period in

his development to delight in the tasks of the intellect. To rejoice in the labors of the mind is not a prevailing characteristic of the natural man. As Aristotle has put it, "All men naturally desire knowledge, but not all men desire the labor of learning." It often happens, however, in intellectual discipline, as in the development of moral virility, that a course of action which is done for a time under the stress of a sense of obligation and as a grievous duty, becomes after a time a pleasure and a joy. Just as it is possible to grow into an enthusiasm for that which is right and honorable and of good report, so also it is possible by the discipline of one's intellectual powers to develop an enthusiasm for the activities and pursuits of the mind.

The practical problem, therefore, for the teacher, and particularly for a faculty of teachers, is to choose that body of studies which will best produce a spirit of devotion to the cause of knowledge and of joy in its service. Any satisfactory solution of this problem must rest upon the basal principle that true intellectual freedom is gained only through discipline. If there is to be intellectual power in the world it must be the power of a free spirit; and the power of a free spirit in turn can arise only out of a spirit of docility. To this doctrine, however, there are many who would enter a most emphatic dissent. They very stoutly insist that there should be no body of required studies whatsoever in a university, but that each student should follow his own free choice in selecting the particular subjects he may be pleased to pursue, and that such initial exercise of freedom is itself the best training for the wise uses of freedom in general. It is a very serious question indeed, whether the freedom of an ignorant and undisciplined mind may not come to defeat its own ends and purposes.

In Princeton we have very positive convictions on this point. We believe that the teaching body of a university should select a consistent group of required studies for the express purpose of developing in the student to the highest degree of efficiency the free powers of his intellectual life. We believe that it is absolutely necessary to have a certain schooling in preparation for the responsibilities of freedom; and that the hit-and-miss choice of an immature mind in new and strange surroundings, the blind groping for the truth by the process of trial and error, form a poor propædæutic to the serious tasks of free investigation, of original thought, and of practical efficiency. We believe, moreover, that the best preparation for the freedom of the life of reason is that group of studies whose very nature tends to the training of the powers of the mind, developing in a man both capability and resource, and at the same time giving him a knowledge of himself and of the world in which he lives.

Such studies are humanistic so far as they give a man a knowledge of the human setting of his life and create within his being a universal and sympathetic interest in humanity. They put him in possession of the race experience so that in his own mind he may hold the treasures of the world. Therefore, he must be so led in the way of knowledge that he will come to know something of the human world in which he lives, something also of the world of the past whose achievements are his heritage, something of the form and spirit of its classical languages and literature, something of its history, customs, manners, morals, and institutions — in a word, he must know the thought of the world which possesses universal meaning and universal significance. There are, indeed, certain fundamental ideas which we may securely reckon

with as constant factors in the equation of life. I do not for a moment believe that the whole world of knowledge is composed of shifting and variable elements, so that we are constrained to acknowledge that whatever is true today may be false tomorrow. On the contrary, I would urge with all the emphasis of my deepest conviction that there is a body of universal truths, independent of age and of race, which vitally concern the ultimate values of life and which determine the possibilities of human development. Such truths the scholar must command if he in any sense is to command the world in which he lives.

Not only the human world, but also the world of nature, must be a part of this general body of knowledge. In these first stages of education the study of science should form a very central and essential part of this prescribed course of study. Pure science is a liberal study; it belongs truly to the humanities, for it not merely gives knowledge of facts; it does more; it is a training in habits of precision, in accuracy of observation, in closely articulated modes of reasoning, in devices of experimentation, and in an appreciation of the valid grounds of proof and the logical basis of correct generalization. A study of scientific method, and of the history of scientific attainment, is in itself a course in inductive logic which tends not merely to fill the mind with items of information, but to expand it as well by an increased demand upon its powers of judgment and of inference. Princeton has been at times misunderstood as regards her attitude to science, and upon this occasion particularly I wish to state distinctly and emphatically, and in words which give no uncertain sound, that we regard the study of science as essential to a liberal education. So firmly grounded is this conviction that we require every candidate for the Bachelor's

degree to pursue some one course at least in science. Princeton, which has the distinction of being the first college in America to introduce the teaching of chemistry in its curriculum; Princeton, which has been the home of Henry, of Guyot, and of Young, hardly needs to defend her old-time and continued interest in scientific discovery and scientific attainment.

Within this same group of studies also there should be some provision for a training in the accurate and facile mode of giving expression to knowledge. The ability to put thought into appropriate and adequate form essentially characterizes a free spirit in the world of mind. To see, to think, to feel, and to remain dumb withal — is any bondage more intolerable? Certainly the educated man should be able to understand his own language with some appreciation of its power and beauty, be able also to speak it as to the manor born, and not as a barbarian, and to express himself by the written word in such a manner as to reveal and not to obscure his thought and feeling. He alone can give life to knowledge who has acquired the art of communicating it to others.

At this early stage there should be also some instruction in the beginnings of logic and psychology, at least to the extent of leading the student to understand the workings of his own mind and the laws which govern the processes of reason. In such a course there must emerge some comprehension of the philosophical methods employed in various fields of investigation, of the relation of universal laws to facts, and of the nature of those central correlating and constructive ideas which in every sphere of thought and in every complex situation give a key to the solution of difficult and perplexing problems. It is no little gain in the uses of

knowledge to appreciate the significance of universal concepts and to grasp the import of that great logical idea that there may be a unity in variety and an identity in difference. In my own experience in the teaching of philosophy I have come to the firm conviction that it is of incalculable advantage to the ordinary student to know something of the nature and the range of the main philosophical problems, for they are indeed the problems of life which will inevitably confront him in his own thinking. If in these preliminary discussions at the threshold of philosophy the student can begin to develop for himself some interpretation of life as a whole he has gained immeasurably in the possession of ideas which will tend to unify his thought and ground his conviction through all the wide extent of his experience.

Such is a brief description of the body of studies which should engage the first years of a student in his university career. At a time when he himself is learning to put his own mind in order he is unconsciously reinforced in his efforts if he finds himself daily engaged with a consistent group of studies which themselves form a system. A systematic mind does not develop naturally out of a miscellany of intellectual interests and activities. The idea of system and of systematic organization and of the logical correlation of essential parts within a consistent and comprehensive whole should characterize any body of required studies which is capable of justifying itself. Familiarity with a logical group of studies is itself an unconscious schooling in logic.

After this early period of required studies, the liberty which is born of discipline can be wisely encouraged to manifest itself in the free choice of study for the remaining years of the university course. It is in accordance with the

Princeton program that this freedom of choice is granted to every student at the beginning of the second half of his undergraduate course — at the opening of his Junior year; only the choice is not allowed to lose itself in a maze of unrelated subjects. Here again we believe that there rests upon the teaching body a peculiar obligation to prevent an unintelligent and indiscriminate choice of studies which will inevitably result in a corresponding dissipation of energy. No compulsion is laid upon the student in the upper years of his college course to enter any particular field of study or to engage in any particular pursuit, but when according to his own free will he decides upon the definite line of special work he wishes to undertake we believe that he should give himself to some systematic effort within a group of cognate subjects. We require him, therefore, to give a substantial part of his time to the courses of the particular department which he selects. Two courses may be chosen in any other fields particularly appealing to his interests. Freedom is thus secured without the danger of a loss of power in fruitless and confused activities.

While the student's work is centered in the region of his special interests, it must be taken up in a broad-minded spirit which transcends the utilitarian demands of any particular profession or technical pursuit. The university is not specifically designed for the purpose of fitting a man directly for the daily duties of his future work in life. It should not attempt to develop a particular talent for a particular task, but the whole man. No faculty of the mind can be satisfactorily trained in isolation. There must be a symmetrical growth of all faculties. The high potential of stored energy, moreover, acquired in the process of a fully rounded development of all a man's powers lends an increased

momentum and driving force to the particular activities of his specialty and thus allows many lines of capability to meet in one point of practical efficiency. Methods of instruction should not narrow down to an anticipation of the customary procedure of the office and counting-room. The undergraduate education should not attempt to train specialists nor to drill the students in any definite routine or rules of practice. It is not rules of practice, but the fundamental principles and governing laws of a subject which are of supreme value to one who would win his way to the heart of knowledge. Fit a man for the day's work, but at the same time equip him to meet the crisis and the emergency which the day's work will inevitably bring forth. He who has laid a broad and secure foundation will have no difficulty in erecting the superstructure. Whatever he builds, he will be able to build himself into the work of his hand and brain. Make a man and he will find his work.

At this stage of the developing mind every effort should be put forth to secure originality of thought. By originality of thought I do not mean an original contribution to the world of knowledge necessarily, but an individual appropriation of the truth which by such a process becomes peculiarly one's own — the independent ability to think oneself *into* and *through* a subject, to be the master of one's knowledge and not its slave, and to acquire a critical sense of appreciation that will nicely discriminate, in the face of the crucial situations and the significant problems of life, between the things essential and the things unessential, between that which has value and that which has no value. We should not require of our students mere acquisition, but a high order of reflective thinking which manifests itself in methodical habits of clear and efficient thinking, in breadth of vision,

in an intellectual curiosity, in a tolerant spirit and an open mind. Let us not standardize either the teacher or the student, but allow the full play of fresh original impulse.

Among all of the forces which tend to develop the strength of personality one of the most efficient in our experience at Princeton has been the preceptorial method of instruction. This rests upon the principle that nothing develops personality so fully and so satisfactorily as personality itself. To bring the inquiring mind into daily contact with the knowledge, the art, and the enthusiasm of one who is skilled in his own special field of attainment — this is the supreme end of education. The most satisfactory results are gained when instruction becomes individual. It is only by individual care and guidance that the man of one talent can be developed as well as the man of ten talents. The university has also a responsibility in ministering to the needs of the average man and enabling him to raise his factor of efficiency to its highest power. To discover native ability, to guide it into proper channels, to quicken ambition, to fire the imagination, to watch and attend at the birth of a soul — that is the highest privilege and most solemn function of the teacher.

The results which by the four years of training we hope and expect to produce may be characterized in a single sentence: It is a transformation of the school-boy into a man of the world — a man who can move freely and familiarly in the midst of the world's varied activities, who speaks its language, who is conversant with its manners, and who can interpret its thought. Do not misunderstand this meaning, however; it must be the world conceived in no narrow and limited sense of the term. The true man of the world is not confined to the knowledge merely of his own day and generation. He must know the world of the past as well as the

world of the present. For if he knows the past he is more capable of serving the present. He must be free from provincialism not only as regards space, but also as regards time. His knowledge also should not be restricted to any particular class of pursuits or of interests, but should comprehend a cross-section of all social strata and embrace in intelligent and sympathetic regard the man whose life is a fight for bare existence as well as the one whom he may seek as a companion and a friend. The more profound and widely extended his knowledge of the world the more powerfully will he dominate it. Let the college man be a man of the world, but let his world be the world of all time, of all lands, and of all sorts and conditions of men.

After the four years of the strictly college course have been completed there should be satisfactory facilities offered in a university for the varied pursuits of advanced students, where all of the powers broadly and profoundly developing during the preparatory years may be concentrated upon some subject which is to become the absorbing work of life. This is the region where many lines of effort converge in one focal point of heat and light; where special scholars may be trained; where the spirit of productive labor may be fostered; where they who learn may become in turn teachers and masters in the school of thought; where the once faltering mind may finally speak in tones of authority in the great world of knowledge. The buildings of our new Graduate College, now in process of construction, form a home where our special scholars, through daily intercourse one with another, may broaden their friendships and interests and at the same time find themselves stimulated in their zeal for the particular subjects which they are pursuing. There the communal life of those who have consecrated themselves to

the sovereign decrees of truth should illustrate the devotion, the self-sacrifice, the austerity, and the enthusiasm of scholarship.

We hear much today of vocational studies. Princeton has ever recognized the value of vocational study, but we would reserve the privilege of interpreting the word vocational in its highest and most significant sense. We would give no meager nor secondary significance to this word. The truly vocational study, it would seem, is that which fits one to respond intelligently and with free conviction to the vocation of man — that high calling which is the summons to no particular pursuit nor profession, but which is a world-wide and common call to every man to take his place, to do his work, and to play his part in the community of his fellows. Whatever may be our special field of work, as men we are to live our lives within the great social organism of humanity. As Kant has splendidly put it, "Man's greatest concern is to know how he shall properly fill his place in the universe and correctly understand what he must be in order to be a man." The years of intellectual discipline should create in every one who is a sincere seeker after the truth a profound sense of human obligation, of an obligation which is the natural complement of the privileges which he has enjoyed. While our teaching must develop power, it must also develop a sense of responsibility for the use of that power; that sense of responsibility which makes the scholar peculiarly responsive to the claims of his less highly favored fellows. If there is an especially favored class in the world, it is the group of men who have profited by the privileges of an education. It is their duty to prove themselves worthy of recognition as an aristocracy — as an aristocracy, however, in the original meaning of that word. And their rule and

influence in the community in which they live will show itself to be the best so far as it is determined by a wise purpose to devote the power of knowledge to the betterment of human conditions and to the satisfaction of human needs. It is in no sense a survival of the fittest if he who survives is content to survive alone. Our universities must teach to their students in season and out of season this lesson of life: With all their getting let them get understanding — that understanding of their station and their duties which will reveal to them this supreme law of privilege, that he who commands the sources of light must become a bearer of light to others. The perplexing political questions of the day arise largely out of strained and perverted social relations of man to man. If our social relations are to be satisfactorily adjusted, the privileged classes must give to their less favorably conditioned fellows some wise thought, some measure of sacrifice, some active sympathy and consideration, and thereby make success tributary to service. They who are coming more and more to be regarded as the natural leaders in this cause of humanity and they who are under compulsion to lead by example as well as by precept and suggestion are that very class of men who have come into possession of the highest of all privileges — the trained mind and the human heart.

The first President of our country and the first American received in Nassau Hall the grateful acknowledgments by Continental Congress for his service in establishing the freedom and independence of the United States. For a part of the year 1783, from June to November, Nassau Hall was the Capitol of the young Republic, and here Adams, Jefferson, Madison, and their distinguished colleagues sat in counsel. The love of country has been a central lesson

in the teachings of our university. Naturally we cannot expect our students generally to attain to the high offices of public trust in our country, but we do expect every man who bears the Princeton mark and who is true to the Princeton traditions to serve his day and generation with fidelity and to bear upon his soul the burden of humanity.

This institution was not founded in the spirit of civil liberty alone, but in the spirit of religious liberty as well; in that Christian faith and hope which is our most treasured tradition. Our fathers learned the lesson of the Great Teacher that the law of life is a law of liberty — a liberty which finds expression, however, in a law of service and a law of sacrifice. Our hope and our prayer is that their sons who bear their names and who are of their breed and blood may keep faith with the past while moving forward to possess the new lands of promise and of plenty.

NEW WINE AND OLD BOTTLES¹

By WILBUR W. THOBURN

WHAT is our greatest danger? Perhaps it is the danger of failing to live true. I do not mean hypocrisy — that is acting a lie — but the failure to put into action what we are.

Here is a common saying, "This is my ideal; I confess I do not live up to it." And this often means, "I do not try." If I were talking to students of zoölogy I would say that the presence of any power or organ means that it is being used; its disappearance means that it is being neglected. All the symmetrical forms and all the grotesque and one-sided forms are the products of this law. And we are under this law. Its action is rapid in the immaterial world. The removal of undesirable things, and the making permanent of good things, are never to be regretted; but by failing to live our ideals we lose the best part of ourselves.

We hear much in this place about the dangers that threaten the young in the university. Parents and friends anxiously watch the changes that come, and fear the end. College life means metamorphosis, and each stage is fraught with danger. Those who anxiously watch the process wonder how it is possible to get an image of a man from the grotesque forms that sometimes masquerade as youth. Of course, the man comes, in most cases. College life is not a failure,

¹Originally delivered to the students of Leland Stanford Junior University, and reproduced here by special permission of Mrs. Harriet W. Thoburn.

though it is far from the success it might be. The intellectual and spiritual birth-rate exceeds the death-rate. Few fail utterly; few succeed in any great degree; but the balance is on the side of success.

When a young man enters college most of his standards are external. Few of those who come here have lived long enough to accumulate much experience. The training of early years gives a trend which none of us are strong enough to overcome completely, even when we recognize its desirability. Our opinions, our beliefs, our bias in social and political and intellectual questions, are derived from our parents far more completely than our forms and features. It is perhaps the knowledge of this fact that adds to the solicitude of parents when they send their children away from home. They know what the student does not find out until later — that this training has never been tested by the one whom it most concerns, that the standards are external, and that opinions are not yet convictions.

Now, it is here, during this period of intellectual living, that the change comes in our attitude toward our standards of living. Heretofore we have lived as others directed or influenced. We are here to acquire the power of directing ourselves. Impulse and feeling and emotion must here acquire some rational basis. Up to this time they have been the spontaneous fruits of our living. Heretofore we have acted because we felt like it; now we must know why we act.

This analytical process destroys much of our power of doing. By the time we have studied our steam to find what it is, it has become cold water. By the time we have thought much about the emotional and impulsive religious life which we have led, the emotion is all gone, or it may be that it is

displaced by another. Cold water that has once been steam is insipid and somewhat disgusting. And so a religious life that has cooled down from emotionalism into rationalism often gives its owner a feeling akin to nausea. Some of the hardest words I have ever heard spoken against religion have come from those who at one time were enthusiastically religious. Some new wine has been poured into old bottles and turned sour.

Our beliefs grow up with us. They are not entirely, not even largely, a matter of the intellect. They are part of our breeding and of our living. Many of our reasons for things are inherited from our parents. We do not always understand how they are constructed. Like a child who has received a watch, we play with it and break it, but cannot mend it. Many people think children ought not to play with watches. They are for older people. In the same way many people think that children should not play with reason, or meddle with the carefully constructed thought-systems of their fathers. They want them to take these systems, use them, call them their own, but dread the analyzing spirit that may try to find how the thing is made, and so spoil it.

Many fathers and mothers say to me, "If my boy will only hold on to the *fundamentals*." They are afraid that the business of the university is to overthrow fundamentals. As if fundamentals could be overthrown! What they mean by fundamentals is their own conception of the truth, the basis of their own belief. They want their boys to wear their clothes — not the same style only, but the identical clothes — with all the creases and wrinkles and patches in place. Now, the wrinkles and creases represent experience and testing, and the patches are the scars — honorable scars of victory. And I have no patience with the sopho-

moric spirit which vaunts its reason and throws into the rag-bag everything that the fathers believed. We would not be here today if our fathers had not believed very close to the truth. However far afield we may go in our young and callow days, the larger part of us will be found revamping the old beliefs of our fathers and mothers when we go to work in the world. I have taught long enough to know that this is true. But the time comes when the child becomes the man, when he must know how his watch is made, even if it costs him several watches. The time comes when he finds himself asking, "Why do I believe this? Why do I practice this?" And because he cannot at once find a reason that will satisfy, many of the things he has believed all his life in common with his father will be laid on the shelf until the experiences of life lay a foundation for them again. Then they will be taken down. He will cease to do many of the things he has customarily done, because he finds that they are not the natural fruit of his life. It seems like hypocrisy to do them, even for the sake of father and mother. I have letters and figures from some hundreds of students that show me that eighty-five per cent of them take up their old practices again when their real living seeks expression. But there is nothing unnatural or very alarming to me in the suspension of religious activity, which is common among young men and women at the university. It is one of the penalties we pay for our isolation. Student life is not real life. It is a dangerous period; — all climacteric periods are dangerous. But they seem to be part of the plan of God's world. This suspension is only temporary. It is largely due to the confusion of change and readjustment; to the transfer of allegiance from authority to self. The change rarely comes without confusion, but it must come,

and when it is complete it is worth all it costs. A little bit of real living will bring back the enthusiasm and emotion, and no one can be faithful and true to his ideals without finding God displacing them with himself. Much as I sympathize, therefore, with the more or less painful processes of change, I do not regard the change itself as the greatest danger that threatens the young man or woman here. It must come, and this is the natural time for it to come.

To the one who looks in vain among his books and notes for the old standards by which he shaped his life, I would say, "They are not there. You are here to study tools and methods, and this study fills a large part of your life. But the study of tools and methods and the filing of your wits will neither give you the glow of exercise nor the emotions of living; nor will study about God ever give you the confidence that working with Him gives." As students our position is abnormal. We get more than we give. When you resume your place in the world, life will bring back the emotion you think you have lost, and clear up all the doubts that now seem so great. We all face the danger of mistaking the form in which the truth was clothed for the truth itself.

Calvinism and Arminianism are trifling matters compared with the fact that God is and that we may call him our Father. Unitarianism and Trinitarianism are mere word-quibbles compared with the fact that the spirit of Christ is in the world, saving it. These things are not fundamentals. They are what many mean by essential and fundamental, but they are only *terms*, forged by human intellects to express one phase of the truth as it appeared to them. There will be some astonished people who reach heaven and find that Christ was neither Methodist nor Presbyterian, Calvinist

nor Arminian — that He cared for none of these things except as they hampered and hindered those who believed them instead of believing Him, who worshiped them instead of using them to serve Him.

Many of you are now in a period of change. Well that it should come during the isolation of your college days. You will never have so much time to settle things as now; yet you will find that you can settle very few. Have confidence in yourself. Trust your nerves to tell the truth, unless you have been abusing them. Some state this another way, and say, "Trust in God." I mean the same thing. Be sure that you believe, and do not hold a mere opinion. To define is not belief; experience gives belief.

God and righteousness and Christ, miracles and immortality, fatherhood and brotherhood, sin and redemption, these are not theological words though many theologies have been written about them. All are facts of experience, and as facts they all touch our lives in some way. Our touch with them is our knowledge of them. But do you not see it? We cannot talk about them and compare notes about them without changing our ideas of them and modifying our definitions.

Many think it impossible to separate these things from the philosophy about them, wicked to try. We must try. We will ask Christ and history and literature and life what they say about these great facts. When we get their answers, for they all speak of them, we will probably construct another philosophy in place of the old. It will seem better to us than the old, though perhaps not very different, because it expresses things that we believe, not what we have been told to believe.

Believe in yourself. If a statement or a fact appeals to you as true, believe it. Be your own authority. Bottle your own wine. Friends will stand around with old bottles and beg you to put your new wine in them. They are wrong in asking, and you are wrong to try. Your new wine needs aging. It must be worked over and must swell up and settle down and be tested to see if it is worth anything before it can be put into anything but a new elastic bottle. Bottle it for yourself. It is the best wine in the world for you. Perhaps when it has aged it will be just like that in the old bottles, but you must cling to it as it is. It is yours.

So I ask you not to be afraid of the fruit of your own thoughts. We here study together these great truths of life — God and Christ and man, sin and life and death and immortality. It is far more important that you should be sincere with yourself than that you should believe something that somebody has told you.

There is no final test of truth but this one — its appeal to our lives. Coleridge says somewhere that the preëminence of the Bible lies in the fact that it finds us. By this test judge all truth — does it find you? Do not wait to reason it out. The fundamentals, the real fundamentals — the basis of all belief — cannot be reasoned out.

The fatherhood of God, the divinity of man, the reality of righteousness, the spiritual life, immortality, the ideality of Christ — these are some of the fundamentals. We apprehend them. Just as we get up in the morning and throw open the blinds and know that the sun is there, so these great facts appeal to us when we squarely face them. But the greatest danger that may threaten a young man or woman is the failure to put into action the truth that he does believe.

I sat by the side-lines the other evening when the ball was driven almost to my feet, and those twenty-two demons whose breathing nearly burst their canvas sides stood puffing a moment before they sprang at each other's throats. I almost stampeded; I did long to be one of them again. But I only sat and shivered there on the bleachers with another football philosopher, and we told each other how to play the game.

A young man said to me the other day, "I have not been in church for three years." I looked him over as a curiosity and asked him why. His reply was, "The glaring inconsistencies of church members made me sick. I could not stand it and just stayed away." How consistent! Here was such a good church member that he never went to church. A man who imagined he had an ideal standing with his back to it. Ideals are to run races with. The moment we stop chasing them they sit down — become opinions.

If the old channel through which your best life flowed is filled up, find another one. If you cannot pour your new wine into old bottles, find new ones. Bottle it or lose it. If you cannot serve God and man through the church of Christian Endeavor because the inconsistencies there glare at you, let the truth glare somewhere that men, seeing how consistent a man can be, may be led to think how true God is. If you have new light on old questions, let that light shine. If you put it under a bushel it will go out. "If therefore the light that is in thee be darkness, how great is that darkness."

The time comes more than once in a man's life when he must know what he believes, when the truth that is in his own heart is all that he can find. But no truth is ours until we first live it, until it enters into our lives and we become it.

THE DESCRIPTION OF A GENTLEMAN¹

BY JOHN HENRY NEWMAN

HENCE it is that it is almost a definition of a gentleman to say he is one who never inflicts pain. This description is both refined and, as far as it goes, accurate. He is mainly occupied in merely removing the obstacles which hinder the free and unembarrassed action of those about him; and he concurs with their movements rather than takes the initiative himself. His benefits may be considered as parallel to what are called comforts or conveniences in arrangements of a personal nature: like an easy chair or a good fire, which do their part in dispelling cold and fatigue, though nature provides both means of rest and animal heat without them. The true gentleman in like manner carefully avoids whatever may cause a jar or a jolt in the minds of those with whom he is cast — all clashing of opinion, or collision of feeling, all restraint or suspicion, or gloom or resentment; his great concern being to make every one at ease and at home. He has his eyes on all his company; he is tender towards the bashful, gentle towards the distant, and merciful towards the absurd; he can recollect to whom he is speaking; he guards against unseasonable allusions, or topics which may irritate; he is seldom prominent in conversation, and never wearisome. He makes light of favors while he does them,

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and seems to be receiving when he is conferring. He never speaks of himself except when compelled, never defends himself by a mere retort, he has no ears for slander or gossip, is scrupulous in imputing motives to those who interfere with him, and interprets everything for the best. He is never mean or little in his disputes, never takes unfair advantage, never mistakes personalities or sharp sayings for arguments, or insinuates evil which he dare not say out. From a long-sighted prudence, he observes the maxim of the ancient sage, that we should ever conduct ourselves towards our enemy as if he were one day to become our friend. He has too much good sense to be affronted at insults, he is too well employed to remember injuries, and too indolent to bear malice. He is patient, forbearing, and resigned, on philosophical principles; he submits to pain, because it is inevitable, to bereavement, because it is irreparable, and to death, because it is his destiny. If he engages in controversy of any kind, his disciplined intellect preserves him from the blundering discourtesy of better, perhaps, but less educated minds; who, like blunt weapons, tear and hack instead of cutting clean, who mistake the point in argument, waste their strength on trifles, misconceive their adversary, and leave the question more involved than they find it. He may be right or wrong in his opinion, but he is too clear-headed to be unjust; he is as simple as he is forcible, and brief as he is decisive. Nowhere shall we find greater candor, consideration, indulgence; he throws himself into the minds of his opponents, he accounts for their mistakes. He knows the weakness of human reason as well as its strength, its province, and its limits. If he be an unbeliever, he will be too profound and large-minded to ridicule religion or to act against it; he is too wise to be a dogmatist or fanatic in his

infidelity. He respects piety and devotion; he even supports institutions as venerable, beautiful, or useful, to which he does not assent; he honors the ministers of religion, and it contents him to decline its mysteries without assailing or denouncing them. He is a friend of religious toleration, and that, not only because his philosophy has taught him to look on all forms of faith with an impartial eye, but also from the gentleness and effeminacy of feeling, which is the attendant on civilization.

Not that he may not hold a religion too, in his own way, even when he is not a Christian. In that case his religion is one of imagination and sentiment; it is the embodiment of those ideas of the sublime, majestic, and beautiful, without which there can be no large philosophy. Sometimes he acknowledges the being of God, sometimes he invests an unknown principle or quality with the attributes of perfection. And this deduction of his reason, or creation of his fancy, he makes the occasion of such excellent thoughts, and the starting-point of so varied and systematic a teaching, that he even seems like a disciple of Christianity itself. From the very accuracy and steadiness of his logical powers, he is able to see what sentiments are consistent in those who hold any religious doctrine at all, and he appears to others to feel and to hold a whole circle of theological truths, which exist in his mind no otherwise than as a number of deductions.

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Harold Lewis
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